Charles E. Kellogg

NOTES

on

EUROPEAN VISIT

1938

CHARLES E. KELLOGG


NEW MAP OF
EUROPE
Rand McNally & Company,
SCALE 1:8,870,000
1 Inch = 140 Statute Miles
1 Centimeter = 88.7 Kilometers
Statute Miles
Kilometers
Capitals shown thus
Railroads
Canals
Names of cities are spelled in their correct local form, which is the proper one to use for commerce and travel. The conventional form is given parenthetically when deemed necessary.
Copyright by Rand McNally & Company, Chicago.
Made in U.S.A.
Boundaries of Countries before World War
Denmark Strait
ICELAND
ARCTIC OCEAN
ARCTIC CIRCLE
ATLANTIC OCEAN
NORTH SEA
MERIDIAN OF GREENWICH
Longitude West of Greenwich
Longitude East of Greenwich
GREAT BRITAIN
IRELAND
NORTHERN IRELAND
SCOTLAND
ENGLAND
LONDON
NORWAY
SWEDEN
FINLAND
DENMARK
ESTONIA
LATVIA
LITHUANIA
RUSSIA
SOVIET UNION
SIBERIA
KOLA PENINSULA
WHITE SEA
LAKE LADOGA
GULF OF BOTHNIA
GULF OF FINLAND
BALTIC SEA
POLAND
GERMANY
BELGIUM
HOLLAND
FRANCE
SWITZERLAND
AUSTRIA
HUNGARY
ITALY
SPAIN
PORTUGAL
ROMANIA
SERBIA
BULGARIA
ALBANIA
GREECE
TURKEY
ASIA MINOR
SYRIA
MESOPOTAMIA
PERSIA
CASPIAN SEA
BLACK SEA
SEA OF AZOV
MEDITERRANEAN SEA
Bay of Biscay
Gulf of Lion
CORSICA
SARDINIA
SICILY
CRETE
CYPRUS
RHODES
MOROCCO
ALGERIA
TUNISIA
TRIPOLI
AFRICA
TRANS-SIBERIAN TRAIL
STOCKHOLM
OSLO
HELSINKI (HELSINGFORS)
TALLINN (REVEL)
RIGA
KAUNAS (KOVNO)
WARSAW
BERLIN
PRAGUE
VIENNA
BUDAPEST
BUCHAREST
BELGRADE
SOFIA
ROME
MADRID
LISBON
PARIS
ANKARA (ANGORA)
BAGHDAD
MOSCOW
LENINGRAD
KIEV
ODESSA
SEVASTOPOL
TIFLIS
BAKU
TASHKENT
ALGIERS
TUNIS
TRIPOLI
RABAT
CASABLANCA
SP. MOROCCO
Longitude West of Greenwich
Longitude East of Greenwich (Fr.)

The United States of America

DEPARTMENT OF AGRICULTURE

To all who shall see these presents, Greeting:

Be it known that Dr. Charles E. Kellogg, Principal Soil Scientist, in Bureau of Chemistry and Soils of the United States Department of Agriculture, whose signature appears on the margin hereof, will, in the immediate future, visit France, Italy, Czechoslovakia, Germany, Austria, Hungary, and Yugoslavia, in connection with the work of this Department, and attend the International Agricultural Institute to be held at Rome, Italy.

He is hereby introduced and cordially commended to all persons with whom he may come in contact, whose good offices on his behalf are earnestly requested.

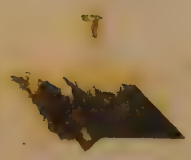
Charles E. Kellogg

In witness whereof I have hereunto subscribed my name and caused the seal of the Department of Agriculture to be affixed. Done at the city of Washington, District of Columbia, this twenty-first day of April, A. D. 1938, and of the independence of the United States of America the one hundred and sixty-second.

W. R. Gee

Acting *Secretary of Agriculture.*

U. S. GOVERNMENT PRINTING OFFICE 2109



New York (May 4) to LeHavre (May 11)

S. S. Washington

List of Passengers

UNITED STATES LINES

LIST OF
CABIN CLASS PASSENGERS

S. S. WASHINGTON

The Largest Steamer Ever Built in America

FROM NEW YORK
WEDNESDAY, MAY 4TH, 1938
TO
COBH, PLYMOUTH, HAVRE AND HAMBURG

UNITED STATES LINES

GREETINGS

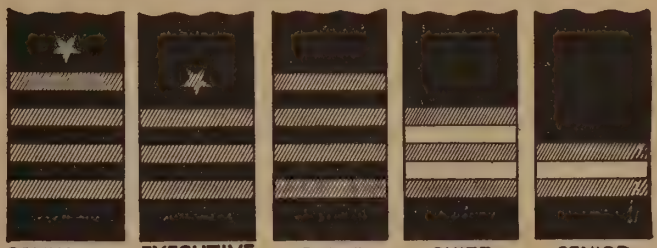
We bid you a hearty welcome on board this great American liner, and we hope you will thoroughly enjoy the voyage.

The MANHATTAN and WASHINGTON are sister ships, the largest liners ever built in America.

These superb steamers mark a new and forward step in the history of the American Merchant Marine. Their popularity shows that discriminating travelers of all lands appreciate our endeavors to provide service and cuisine in keeping with the highest American standards.

UNITED STATES LINES.

HOW TO KNOW THE SHIP'S OFFICERS BY THEIR SLEEVE STRIPES



COMMANDER | EXECUTIVE OFFICER | CHIEF ENGINEER | CHIEF PURSER | SENIOR ASST. PURSER

JUNIOR ASST. PURSER | SURGEON | CHIEF STEWARD | 2 ND STEWARD

COMMANDER - - - Four rows of gold lace with five-pointed star above.

EXECUTIVE OFFICER - Three rows of gold lace with five-pointed star above.

CHIEF ENGINEER - - Four rows of gold lace.

CHIEF PURSER - - - Three rows of gold lace with white velvet between.

SENIOR ASST. PURSER - Two rows of gold lace, with white velvet between.

JUNIOR ASST. PURSER - One row gold lace, one row white velvet.

SURGEON - - - - - Two rows of gold lace with red velvet between.

CHIEF STEWARD - - Three rows of gold lace zig-zagged.

SECOND STEWARD - - Two rows of gold lace zig-zagged.

OFFICERS

~~

COMMANDER:

GILES C. STEDMAN,
LT. COMM., U.S.N.R.

EXECUTIVE OFFICER - RALPH C. DOOLEY, LT., U.S.N.R.

CHIEF ENGINEER - JOHN W. RAKOW, LT. COMM., U.S.N.R.

CHIEF PURSER - - - - FRANK CLYDE ARNOULT

SENIOR ASSISTANT PURSER - JOHN J. WILKINSON

JUNIOR ASSISTANT PURSER - GERALD M. MALCOLM

JUNIOR ASISTANT PURSER - - - - WM. J. DALY

SURGEON - - - - - - - JOHN P. CONNORS

ASSISTANT SURGEON - - - - HUGH F. NEELY

CHIEF STEWARD - - - - - GUSTAVE GRUTGEN

SECOND STEWARD - - - - HERMAN MUELLER

LIST OF CABIN PASSENGERS

S. S. WASHINGTON

FROM NEW YORK

WEDNESDAY, MAY 4TH, 1938

TO

COBH, PLYMOUTH, HAVRE AND HAMBURG

MRS. JORDAN ADDONS
MR. A. L. AINSWORTH
MR. WALTER W. APPLETON
MRS. MANYA ARNOLD
MR. A. ATTERHOLT
MRS. ATTERHOLT
MR. HARRY J. AUSLINGER
MRS. AUSLINGER

MR. KARL BAER
MR. NORMAN A. BAILIE
MRS. BAILIE
MR. JOHN BARCLAY
MR. SAM L. N. BARLOW
MRS. EDITH BARNES
REV. DENNIS B. BARRY
DR. EDWARD BARTOW
MRS. BARTOW
MISS VIRGINIA BARTOW

Mr. Sylvan Bier
Mrs. Bier
Mr. Albert G. Black
Mrs. Black
Master Robert Black
Mr. Hugh K. Boice
Mrs. Boice
Mrs. G. du Boisky
Sir Henry Braden
Mr. George H. Brice
Miss Ethel M. Brien
Mr. William E. W. Brien
Mr. William Gould Brokaw
Mrs. Brokaw
Mr. A. Parker Bryant
Mrs. Bryant
Mr. Edmond Butler

Mrs. Nellie Cantwell
Most Rev. John J. Cantwell
Miss Katherine Carr
Commissioner E. R. Cass
Mr. Irving Claar
Mrs. Claar
Miss Bridget Clyne
Mrs. L. T. Cohu
Mr. L. G. Cover
Mrs. Cover

Mrs. Henry Brinton Coxe
and maid
Dr. Fred V. C. Coxon
Mrs. Coxon
Mr. S. Y. Coyne
Mr. R. G. Crosbie

Mr. Julius Danziger
Mr. Richard H. Davis
Comm. W. N. Derby
Miss Sylvia Dorisleggi
Mr. James E. Duross

Mrs. R. C. Eckhardt
Miss M. J. Eckhardt
Mr. A. R. Edwards
Mrs. Edwards
Master Robert H. Edwards
Mrs. Joseph A. Edwards
and maids

Mr. Larry F. Farrell
Mr. Charles Feehan
Mrs. Feehan
Mr. George Fine
Mrs. Frank Fink
Mrs. H. Fleitman
Mr. Jackson Fleming
Mr. Byers Fletcher
Mrs. Fletcher
Mrs. Lester T. Forbes
Miss Nancy Forbes
Master Malcolm Forbes
Hon. A. C. Frost
Mrs. Frost

Mr. Francis Gardner
Mr. W. J. Gazey
Mr. Herbert Glaessner
Mr. Samuel Goldberg
Mrs. Goldberg
Miss Rebecca Goldberg
Mr. R. V. Gordon
Mrs. William B. Gower
Miss I. J. Gowing
Mr. Sidney Greenstreet
Mr. C. A. Gregory
Mrs. Gregory
Miss Joyce Greig

Mr. V. Grigoroff
Mrs. Grigoroff
Mr. Lorenz Gruensweig
Mrs. John Guiler
Mr. Morris Gussoff

Mr. Anthony J. Haggie
Mrs. Haggie
Mr. William Harloe
Mr. Henry J. Haskell
Mrs. Haskell
Mr. J. Heaton
Mrs. Heaton
Miss Shirley Heaton
Miss Patricia Heaton
Miss Paniela Heaton
and nurse
Dr. John A. Heberling
Mrs. Heberling
Rev. Father Hennessy
Mr. B. Hillman
Mrs. Hillman
Mr. Richard Hirsch
Mr. John M. Holmes
Miss Ida Humphreys
Miss Josephine Humphreys

Mr. Albert Janssen
Mrs. Janssen
Miss Elizabeth Janssen
Mrs. Eva Jessel
Mr. A. G. Jillard
Mr. Robert P. Joyce
Mrs. Joyce

Miss Helen V. Keeler
Dr. Remington Kellogg
Mrs. Kellogg
Dr. Charles E. Kellogg
Mr. Edgar Kennedy
Mrs. Kennedy
Mrs. H. G. Keppel-Palmer
Mrs. G. Kerley
Miss E. Kerley
Mr. E. Kerwin
Mr. Erick Kiewe
Miss E. King
Mrs. S. Kirchheimer
Miss Louise Kirchheimer
Mrs. George Klein
Mr. R. W. Krakauer
Mrs. Krakauer
Dr. William Krumbhaar
Mrs. Krumbhaar

Mrs. Keeler Lafferty
Mrs. Sally P. Langelle
Mr. J. M. Langenieux
Mrs. Langenieux
Miss M. Lansdell
Capt. Percy Lawson-Johnston
Mrs. Lawson-Johnston
Mr. A. A. Lehman
Mr. Waldo G. Leland
Mrs. Leland
Mrs. Amy H. Levy
Mrs. Walter J. Linthicum
Mr. F. P. Lloyd
Mrs. Lloyd
and maid
Mr. H. H. Loeffler
Mrs. Loeffler
Col. H. F. Loomis
Mrs. Loomis
Capt. Harry B. Lovell
Mrs. Lovell
Mr. H. H. Luning
M.r W. J. Lynch
Mrs. Lynch

Very Rev. Joseph T. McGucken, D.D.
Mr. W. R. McLachlan
Mr. C. B. Malone
Mrs. Malone

Mrs. Eugenie Marchado
Mr. Percy Marchant
Mrs. Marchant
Mr. Arthur B. Marsh
Mrs. Marsh
Miss Joan O. Marsh
Mrs. Agnes Campbell Marshall
Mr. K. W. Massey
Mrs. Massey
Mr. J. S. Mead
Mr. Frank D. Meade
Mrs. Meade
Mr. George Meader
Mrs. Meader
Mr. Rudolf Meyer
Mr. C. J. Miller
Mr. D. A. Moscowitz
Mrs. Moscowitz
Dr. Vance B. Murray
Mrs. Murray

Mr. James E. Naylor
Mrs. Naylor
Mr. Frank New
Mrs. Sarah Newman
Miss Belma Noll

Mr. C. L. O'Brian
Mr. James A. O'Brien
Mrs. O'Brien
Miss Una O'Connor

Miss Jackie Page
Mr. A. J. Drexel Paul, Jr.
Mr. M. Pearlman
Mrs. Ingelborg E. Peterson
Miss Gerda Peterson
Mr. Charles E. Pettinos
Mrs. Pettinos
Rev. Charles Pingel
Mrs. Irene H. Potter
Miss Gwendolyn Primrose

Mr. Rene Raas
Mrs. Raas
Miss Carol Raas
Master William Raas
Mrs. Cissy Rodocanachi
Mr. Ellsworth L. Raymond
Mr. Hugo Rebitzer

Dr. Luther H. Reichelderfer
Mrs. Reichelderfer
Mr. Samuel Reinsel
Miss Telka Richter
and maid
Mr. W. D. Roberts
Mr. E. N. Rolser
Mr. L. Rosenbaum
Mr. Alfred Rosenstein

Mr. M. L. Sale
Mrs. M. H. Sawyer
Mrs. Sears
Mr. A. Schreiman
Mrs. Schreiman
Mr. Julius Schullinger
Mrs. Schullinger
Mr. Woodson Spurloch
Mrs. Fitz-Maurice Stacke
Mr. Frank Sullivan
Mrs. M. J. Summer
Miss B. Summer

Mr. E. Taussig
Mr. George Taylor
Mrs. Taylor

Mr. George H. Taylor
Mrs. Taylor
Mrs. Katherine L. Thayer
Mr. S. P. Thompson
Mrs. Thompson
Mr. Barry Thomson
Mrs. E. C. Travis
Mr. Michael Troyan
Mrs. Troyan
Mr. E. H. Turner

Mrs. Florence Vandan
Mrs. Louis Veillon
Miss Adrienne Veillon
Miss Gabrielle Veillon

Mrs. R. F. Walmsley
Mr. R. F. Walmsley, Jr.
Mrs. R. Waseerman
Mr. William E. Weban-Smith
Mrs. Weban-Smith
Miss Emilie Weban-Smith
Mr. B. A. Weimer
Miss F. Weisenfeld

Miss Rose Weiss
Mr. R. B. Werey
Dr. Julius Werther
Mrs. Werther
Mrs. G. P. Whittfield
Mr. Richard Whorf
Mrs. Whorf
Mrs. F. A. Wiesener
Miss B. C. Wiesener
Miss M. Wiesener
Mrs. John T. Wohlgemuth
Dr. William Wolf
Mr. Ludwig Wolfgang
Mrs. Wolfgang
Mr. Henry Wood, Jr.
Mr. Robert M. Woodbury
Miss Dorothea Worsley-Taylor
Mr. A. V. Wright

MEMORANDA

MEMORANDA

UNITED STATES LINES

Weekly Fast Express Service

Sailings FROM Europe 1938

HAMBURG - HAVRE - SOUTHAMPTON - COBH - NEW YORK

FROM EUROPE:	Leave Hamburg	Leave Havre	Leave South-ampton	Leave Cobh	Due New York
MANHATTAN	§May 4	May 5	May 6	May 7	May 12
PRES. ROOSEVELT	§May 11	May 12	May 13	May 14	May 21
WASHINGTON	§May 18	May 19	May 20	May 21	May 26
PRES. HARDING	§May 26	May 27	May 28	May 29	June 5
MANHATTAN	§June 1	June 2	June 3	June 4	June 9
PRES. ROOSEVELT	§June 8	June 9	June 10	June 11	June 18
WASHINGTON	§June 15	June 16	June 17	June 18	June 23
PRES. HARDING	§June 22	June 23	June 24	June 25	July 2
MANHATTAN	§June 29	June 30	July 1	July 2	July 7
PRES. ROOSEVELT	§July 6	July 7	July 8	July 9	July 16
WASHINGTON	§July 14	July 15	July 16	July 17	July 22
PRES. HARDING	§July 20	July 21	July 22	July 23	July 30
MANHATTAN	§July 27	July 28	July 29	July 30	Aug. 4
PRES. ROOSEVELT	§Aug. 3	Aug. 4	Aug. 5	Aug. 6	Aug. 13
WASHINGTON	§Aug. 10	Aug. 11	Aug. 12	Aug. 13	Aug. 18
PRES. HARDING	§Aug. 17	Aug. 18	Aug. 19	Aug. 20	Aug. 27
MANHATTAN	§Aug. 24	Aug. 25	Aug. 26	Aug. 27	Sept. 1
PRES. ROOSEVELT	§Aug. 31	Sept. 1	Sept. 2	Sept. 3	Sept. 10
WASHINGTON	§Sept. 7	Sept. 8	Sept. 9	Sept. 10	Sept. 15
PRES. HARDING	§Sept. 14	Sept. 15	Sept. 16	Sept. 17	Sept. 24
MANHATTAN	§Sept. 21	Sept. 22	Sept. 23	Sept. 24	Sept. 29
PRES. ROOSEVELT	§Sept. 28	Sept. 29	Sept. 30	Oct. 1	Oct. 8
WASHINGTON	§Oct. 5	Oct. 6	Oct. 7	Oct. 8	Oct. 13
PRES. HARDING	§Oct. 12	Oct. 13	Oct. 14	Oct. 15	Oct. 22
MANHATTAN	§Oct. 19	Oct. 20	Oct. 21	Oct. 22	Oct. 27
PRES. ROOSEVELT	§Oct. 26	Oct. 27	Oct. 28	Oct. 29	Nov. 5
WASHINGTON	§Nov. 2	Nov. 3	Nov. 4	Nov. 5	Nov. 10
PRES. HARDING	§Nov. 9	Nov. 10	Nov. 11	Nov. 12	Nov. 19
MANHATTAN	§Nov. 16	Nov. 17	Nov. 18	Nov. 19	Nov. 24
PRES. ROOSEVELT	§Nov. 23	Nov. 24	Nov. 25	Nov. 26	Dec. 3
WASHINGTON	§Nov. 30	Dec. 1	Dec. 2	Dec. 3	Dec. 8
PRES. HARDING	§Dec. 7	Dec. 8	Dec. 9	Dec. 10	Dec. 17
MANHATTAN	§Dec. 14	Dec. 15	Dec. 16	Dec. 17	Dec. 22
PRES. ROOSEVELT	§Dec. 21	Dec. 22	Dec. 23	Dec. 24	Dec. 31
WASHINGTON	§Dec. 28	Dec. 29	Dec. 30	Dec. 31	Jan. 5

§ Sails Wednesday A. M. Passengers embark Tuesday evening.

Westbound passengers embarking at Havre, Southampton or Cobh are advised to verify the hour of departure by communicating with our nearest European office a few days prior to their scheduled return, sailing hours of steamers from these ports being subject to minor changes due to tide and weather conditions.

The Purser will gladly give you any further information desired.

The American Way To and From EUROPE

Sailings TO Europe 1938

NEW YORK - COBH - PLYMOUTH - HAVRE - HAMBURG

TO EUROPE:	Leave New York	Due Cobh	Due Plymouth	Due Havre	Due Hamburg
WASHINGTON	May 4	May 10	May 10	May 11	May 12
PRES. HARDING	May 11	May 18	May 19	May 19	May 21
MANHATTAN	May 18	May 24	May 24	May 25	May 26
PRES. ROOSEVELT	May 25	June 1	June 2	June 2	June 4
WASHINGTON	June 1	June 7	June 7	June 8	June 9
PRES. HARDING	June 8	June 15	June 16	June 16	June 18
MANHATTAN	June 15	June 21	June 21	June 22	June 23
PRES. ROOSEVELT	June 22	June 29	June 30	June 30	July 2
WASHINGTON	June 29	July 5	July 5	July 6	July 7
PRES. HARDING	July 7	July 14	July 15	July 15	July 17
MANHATTAN	July 13	July 19	July 19	July 20	July 21
PRES. ROOSEVELT	July 20	July 27	July 28	July 28	July 30
WASHINGTON	July 27	Aug. 2	Aug. 2	Aug. 3	Aug. 4
PRES. HARDING	Aug. 3	Aug. 10	Aug. 11	Aug. 11	Aug. 13
MANHATTAN	Aug. 10	Aug. 16	Aug. 16	Aug. 17	Aug. 18
PRES. ROOSEVELT	Aug. 17	Aug. 24	Aug. 25	Aug. 25	Aug. 27
WASHINGTON	Aug. 24	Aug. 30	Aug. 30	Aug. 31	Sept. 1
PRES. HARDING	Aug. 31	Sept. 7	Sept. 8	Sept. 8	Sept. 10
MANHATTAN	Sept. 7	Sept. 13	Sept. 13	Sept. 14	Sept. 15
PRES. ROOSEVELT	Sept. 14	Sept. 21	Sept. 22	Sept. 22	Sept. 24
WASHINGTON	Sept. 21	Sept. 27	Sept. 27	Sept. 28	Sept. 29
PRES. HARDING	Sept. 28	Oct. 5	Oct. 6	Oct. 6	Oct. 8
MANHATTAN	Oct. 5	Oct. 11	Oct. 11	Oct. 12	Oct. 13
PRES. ROOSEVELT	Oct. 12	Oct. 19	Oct. 20	Oct. 20	Oct. 22
WASHINGTON	Oct. 19	Oct. 25	Oct. 25	Oct. 26	Oct. 27
PRES. HARDING	Oct. 26	Nov. 2	Nov. 3	Nov. 3	Nov. 5
MANHATTAN	Nov. 2	Nov. 8	Nov. 8	Nov. 9	Nov. 10
PRES. ROOSEVELT	Nov. 9	Nov. 16	Nov. 17	Nov. 17	Nov. 19
WASHINGTON	Nov. 16	Nov. 22	Nov. 22	Nov. 23	Nov. 24
PRES. HARDING	Nov. 23	Nov. 30	Dec. 1	Dec. 1	Dec. 3
MANHATTAN	Nov. 30	Dec. 6	Dec. 6	Dec. 7	Dec. 8
PRES. ROOSEVELT	Dec. 7	Dec. 14	Dec. 15	Dec. 15	Dec. 17
WASHINGTON	Dec. 14	Dec. 20	Dec. 20	Dec. 21	Dec. 22

The Purser will gladly give you any further information desired.

UNITED STATES LINES

AMERICAN ONE CLASS STEAMERS

LIVERPOOL — BELFAST — BOSTON — NEW YORK

NEW YORK — COBH — LIVERPOOL

From Europe **PROPOSED SAILINGS** **To Europe**

Leave Liverpool	Leave Belfast	Due NewYork	STEAMER	Leave NewYork	Due Cobh	Due Liverpool
★May 13	May 14	May 23	American Shipper	---------	--------	---------
★May 27	May 28	June 6	American Importer	May 14	May 22	May 23
★June 10	June 11	June 20	American Shipper	May 28	June 5	June 6
★June 24	June 25	July 4	American Importer	June 11	June 19	June 20
★July 8	July 9	July 18	American Shipper	June 25	July 3	July 4
★July 22	July 23	Aug. 1	American Importer	July 9	July 17	July 18
★Aug. 5	Aug. 6	Aug. 15	American Shipper	July 23	July 31	Aug. 1
★Aug. 19	Aug. 20	Aug. 29	American Importer	Aug. 6	Aug. 14	Aug. 15
★Sept. 2	Sept. 3	Sept. 12	American Shipper	Aug. 20	Aug. 28	Aug. 29
★Sept. 16	Sept. 17	Sept. 26	American Importer	Sept. 3	Sept. 11	Sept. 12
★Sept. 30	Oct. 1	Oct. 10	American Shipper	Sept. 17	Sept. 25	Sept. 26
★Oct. 14	Oct. 15	Oct. 24	American Importer	Oct. 1	Oct. 9	Oct. 10
★Oct. 28	Oct. 29	Nov. 7	American Shipper	Oct. 15	Oct. 23	Oct. 24
★Nov. 11	Nov. 12	Nov. 21	American Importer	Oct. 29	Nov. 6	Nov. 7
★Nov. 25	Nov. 26	Dec. 5	American Shipper	Nov. 12	Nov. 20	Nov. 21
★Dec. 9	Dec. 10	Dec. 19	American Importer	Nov. 26	Dec. 4	Dec. 5
★Dec. 23	Dec. 24	Jan. 2	American Shipper	Dec. 10	Dec. 18	Dec. 19

★ Calling at Boston.

The Purser will gladly give you any further information desired.

UNITED STATES LINES

AMERICAN ONE CLASS STEAMERS

LONDON — NEW YORK

NEW YORK — ‡PLYMOUTH — LONDON

‡ Calling at Plymouth when scheduled.

From New York—EVERY FRIDAY—From London

From Europe **PROPOSED SAILINGS** **To Europe**

Leave London	Due New York	STEAMER	Leave New York	Due Plymouth	Due London
§May 6	May 16	American Trader	--------	--------	--------
May 13	May 23	American Merchant	--------	--------	--------
May 20	May 30	American Farmer	May 6	May 15	May 16
§May 27	June 6	American Banker	May 13	May 22	May 23
June 3	June 13	American Trader	May 20	May 29	May 30
June 10	June 20	American Merchant	May 27	--------	June 6
§June 17	June 27	American Farmer	June 3	--------	June 13
June 24	July 4	American Banker	June 10	--------	June 20
July 1	July 11	American Trader	June 17	--------	June 27
§July 8	July 18	American Merchant	June 24	--------	July 4
July 15	July 25	American Farmer	July 1	--------	July 11
July 22	Aug. 1	American Banker	July 8	--------	July 18
§July 29	Aug. 8	American Trader	July 15	--------	July 25
Aug. 5	Aug. 15	American Merchant	July 22	--------	Aug. 1
Aug. 12	Aug. 22	American Farmer	July 29	--------	Aug. 8
§Aug. 19	Aug. 29	American Banker	Aug. 5	--------	Aug. 15
Aug. 26	Sept. 5	American Trader	Aug. 12	--------	Aug. 22
Sept. 2	Sept. 12	American Merchant	Aug. 19	--------	Aug. 29
§Sept. 9	Sept. 19	American Farmer	Aug. 26	--------	Sept. 5
Sept. 16	Sept. 26	American Banker	Sept. 2	--------	Sept. 12
Sept. 23	Oct. 3	American Trader	Sept. 9	--------	Sept. 19
§Sept. 30	Oct. 10	American Merchant	Sept. 16	--------	Sept. 26
Oct. 7	Oct. 17	American Farmer	Sept. 23	--------	Oct. 3
Oct. 14	Oct. 24	American Banker	Sept. 30	--------	Oct. 10
§Oct. 21	Oct. 31	American Trader	Oct. 7	--------	Oct. 17
Oct. 28	Nov. 7	American Merchant	Oct. 14	--------	Oct. 24
Nov. 4	Nov. 14	American Farmer	Oct. 21	--------	Oct. 31
§Nov. 11	Nov. 21	American Banker	Oct. 28	--------	Nov. 7
Nov. 18	Nov. 28	American Trader	Nov. 4	--------	Nov. 14
Nov. 25	Dec. 5	American Merchant	Nov. 11	--------	Nov. 21
§Dec. 2	Dec. 12	American Farmer	Nov. 18	--------	Nov. 28
Dec. 9	Dec. 19	American Banker	Nov. 25	--------	Dec. 5
Dec. 16	Dec. 26	American Trader	Dec. 2	--------	Dec. 12
§Dec. 23	Jan. 2	American Merchant	Dec. 9	--------	Dec. 19

§ Calling at Boston.

The Purser will gladly give you any further information desired.

UNITED STATES LINES

PRINTED IN U.S.A.

Westminster Abbey, London (England)

UNITED STATES LINES

Suggestion

Beluga Malossol Caviar

Cream of Chicken, Margot

Fried Oysters on Toast, Sauce Tartare - Cole Slaw

Roast Pheasant, Glazed Marrons, Sour Cream Sauce, Bread Crumbs

Hearts of Lettuce, French Dressing

Coupe Lamballe

Cheese and Crackers

Fresh Fruit Basket

Demi Tasse

Musical Program

1. March "S. S. Washington" ..... Kraetke & Collard
2. Indian Love Song "The Waters of the Minnetonka" .... Lieurance
3. Fantasy from the Opera "Maritana" ..... Wallace
4. Waltz "Treasure" ..... Strauss
5. Intermezzo "Holiday" ..... Ponce
6. Selection from "The Only Girl" ..... Herbert

Orchestra under the direction of Mr. Richard Kraetke

DINNER

HORS D'OEUVRES

Hors d'Oeuvres Variees Fresh Fruit Cup, Victoria Egg, Parisienne
Beluga Malossol Caviar Smoked Scotch Salmon Palm Heart, Vinaigrette
Timbale of Pate de Foie Gras Salade Nicoise Lobster Cocktail
Little Neck Clam Cocktail

SOUPS

Cream of Chicken, Margot Bisque of Tomatoes Consomme, Vermicelli
Lamb Broth with Rice Beef Essence, Hot or Cold

FISH

Boiled Halibut, Sauce Choron Filet of Sole, Marguerite
Fried Oysters on Toast, Sauce Tartare - Cole Slaw
Cold: Salmon Steak, Garni - Egg Salad

ENTREES

Saute of Chicken a la King - Cheese Wafers Calf's Tongue a la Byron
Braised Sweetbread, Sauce Madere
Baked Virginia Ham, Fresh Mushrooms, Sous Cloche

Sweet: Apple Fritter, Sauce Sabayon

Legume: Broccoli, Sauce Mousseline

COLD DISHES

Truffled Galantine of Duckling, Sauce Cumberland - Fruit Salad
Yorkshire Ham and Sliced Vermont Turkey - Waldorf Salad
Assorted Cold Delicatess Plate, Suedoise

Refreshment: Orange Sherbet, Nabisco Wafers

ROASTS

Prime Ribs of Beef au Jus, Watercress Larded Leg of Veal, Demi Glace
Philadelphia Capon, American Stuffing, Giblet Sauce
Pheasant, Glazed Marrons, Sour Cream Sauce, Bread Crumbs

FROM THE GRILL
(10 to 15 Minutes)

Sirloin Steak, Fines Herbes Butter Chicken Liver en Brochette
Poussin on Toast - Pineapple Cole Slaw

VEGETABLES

Cauliflower, Polonaise Fresh Green Peas Macedoine of Vegetables
Fried Egg Plant Risotto, Piemontaise Braised Red Cabbage

POTATOES

Boiled Baked Mashed Candied Sweet O'Brien

SALADS

Hearts of Lettuce Sliced Tomatoes Chicory Biarritz Mexicaine
Romaine Melee Combination
Dressings: French Lorenzo Chatelaine Washington

COMPOTE

Preserved Egg Plums, Pears, Peaches, Cherries or Mixed Fruit

DESSERTS

Souffle Praline, Whipped Cream Macedoine of Fresh Fruit in Wine Jelly
Coupe Lamballe Cafe Parfait Cocoanut Macaroon Cake Petits Fours
Burnt Almond or Neapolitan Ice Cream, Nabisco Wafers French Pastry
Iced Strawberry Roll, Hot Chocolate Sauce

CHEESE

Young American Swiss Edam Harz Gorgonzola Cheshire
Camembert Cream Brie Port du Salut Tilsit

Assorted Crackers Pumpernickel Pretzelettes Swedish Bread Ryvita

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Fresh Fruit Basket Assorted Nuts After Dinner Mints
Table Raisins Crystallized Ginger Tunis Dates

Demi Tasse

S. S. WASHINGTON Wednesday, May 4, 1938

Charles Church Vienna (Austria)

UNITED STATES LINES

Musical Program

1. March "El Capitan" ---------- Sousa
2. American Idyl "Indian Summer" ---------- Herbert
3. Overture "Light Cavalry" ---------- v. Suppe
4. Waltz "Oldtimers" ---------- -------- Arr. by Lake
5. Selection "The Sunny South" -------- Arr. by Lampe
5. "College-Capers" ---------- Arr. by Hauenschild

Orchestra under the direction of Mr. Richard Kraetke

Autographs

Gala Dinner

✲✲✲✲✲✲

Martini Cocktail

Fresh Fruit Cup, Victoria Iced Astrachan Caviar
Chilled Table Celery Queen or Ripe Olives

Clear Green Turtle Soup, "Oxford" - Cheese Wafers
Creme a la Reine

Broiled Live Lobster, Melted Butter
Au Gratin Potatoes

Tenderloin Steak, Jardiniere
Green Peas Glazed Carrots Cauliflower
Noisette Potatoes

Refreshment: Champagne Sherbet "Monopole"

Breast of Spring Chicken Sous Cloche "Washington"
Fresh Asparagus String Beans
Broiled Tomato Creamed Mushrooms
Chateaubriand Potatoes

Avocado Pear Salad, French Dressing

Compote of Preserved Strawberries

Plum Pudding, Brandy Sauce
Peach Melba ✦ ✦ Mignardises

Fresh Fruit Basket Assorted Nuts Tunis Dates Table Raisins
Crystallized Ginger After Dinner Mints

Assorted Cheese Platter ∴ Toasted Crackers

Demi Tasse

✲✲✲✲✲✲✲✲

On Board S. S. Washington Saturday, May 7th, 1938

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The Pariscope

ALL THINGS CHANGE, nothing remains, not even the Place de la Nation in Paris which everybody was beginning to think would escape the eagle eye of the modern city planner. The Prefect of Police has been lending a dangerously eager ear to the delicate pleadings of Paris architects who believe in sunshine, trees, open spaces and deep chest breathing, and now it appears certain that the Place will have its old and slightly soiled face lifted, and there will be flowers in its hair. A wide sidewalk, perhaps twenty feet across, will be laid down, and another fifteen feet of curbing allowed for a row of trees. This is going to have some sort of subtle effect on the life and morale of the Paris population; but it is too early yet to be specific. Will it aid or hinder the political demonstrations, which either begin or end in the Place de la Nation? How will it affect the gingerbread fair and similar occasions of legalized gayety? Worry, worry.

JUST WHY THE SPANISH civil war should have an effect on the costumes of Paris traffic police is something that takes a bit of guessing and practically borders on a question in a parlor game. Nevertheless, café sitters-in-the-sun with an eye for detail have noticed that something is missing from a few of the policemen's uniforms and they have duly reported the phenomenon. For some time a few keepers of the peace, who had the benefit of a better than average education or who were raised down among the Pyrenees, have advertised that they spoke Spanish, for the benefit of Spanish tourists, when there *were* any Spanish tourists. They wore the phrase, in metal, "Se habla espagnol." But they have taken off the plaque, because it was in the colors of the Spanish Republic, and the police authorities think it wouldn't be cricket for their men to appear to give support to one side or the other in the present fight. Such rectitude in these dissolute times is cheering.

FRENCH PAINTERS, chinaware tint- ers and pencil sketchers and other ch exponents of the less hairy-chested s will soon be put in the shade. A exhibit, rather unusual for the ch, who only like blood in their s, will be opened on May 19 at the des Colonies in the Bois de Vin- It is the Exposition Nationale Chasse, which means animal ck on a wall, à la any lounge- ny chapter of the Elks. There sort of international fad in positions this year, what one in England and an nd frightening show in the irrepressible Herr endance, giving away als right and left. Al- the French museum tlers and horns and always finds him- cafés with his hat t the place one

United States Liner Washington Brings 740 Passengers to Europe

Many Notables in Business, Theatrical and Diplomatic Fields Arrive in Paris

The Gare St.-Lazare presented an animated spectacle, characteristic of the opening of the tourist season, when 740 passengers from the United States liner Washington arrived on the boat-train from Havre at 11:32 a.m. yesterday.

Among the many notable passengers on board were: Edgar Kennedy, comedian, and Mrs. Kennedy; Richard Whorf and nine other members of the supporting cast of "Amphitryon 38," opening at the Lyric Theatre in London May 17; Miss Una O'Connor, Warner Brothers player; Henry J. Haskell, editor of the Kansas City "Star"; A. C. Frost, American Consul General at Zurich, and Mrs. Frost; Richard A. Davis, American Vice-Consul at Hamburg; Albert Janssen, former Belgian Minister of Finance, with Mr. Janssen and Miss Elizabeth Janssen; Dr. Vance Murray, senior surgeon of the United States Public Health Service, and Mrs. Murray; the Rev. J. J. Cantwell, Archbishop of the diocese of Los Angeles; Commissioner Edward R. Cass, of the New York State Commission of Correction and general secretary of the American Prison Association.

Among Those Arriving

Dr. Charles Edwin Kellogg, chief of the Soil Division, and Albert C. Black, chief of the Bureau of Agricultural Economics of the United States Department of Agriculture, crossed on the liner to attend the International Agricultural Congress in Rome, as did Commander Wilfred Neville Derby, of the United States Coast Guard, and Dr. Remington Kellogg, of the Smithsonian Institution, Washington, both of whom will attend the International Whaling Congress this summer.

Others who arrived were: Mrs. Lamotte T. Cohu, of New York and Southampton, L.I.; Mrs. Henry Brinton Coxe of Philadelphia; Mrs. H. G. Keppel, of Baltimore; Mr. and Mrs. A. Parker Bryant, of Chicago and Palm Beach; Mr. and Mrs. George Taylor, of Brooklyn.

Thirty-six students of Teachers' College, Columbia University, under the leadership of Miss Mildred Bruckheimer, also crossed on the Washington for a four-month tour.

Business Men Aboard

Business men who arrived on the liner included: Charles E. Pettinos, president of Graphite Inc.; A. W. Atterholt, district manager of the United States Lines in Hamburg, and Mrs. Atterholt; William Harloe, of the United Fruit Line; Mr. L. Sale; B. A. Weimer; James E. Naylor, an official of Libby-Owens-Ford Glass Company; R. G. Crosbie and H. H. Luning, of Swift & Company; Woodson Spurlock, Standard Oil official; Arthur B. Marsh; Mr. and Mrs. William Gould Brokow, and Mr. and Mrs. Hugh K. Boice.

Other prominent passengers on the Washington included: Mr. and Mrs. Irving Claar, Colonel and Mrs. H. F. Loomis, Mr. and Mrs. C. B. Malone, Mrs. Louis Veillion and the Misses Adrienne and Gabrielle Veillion, Captain and Mrs. Harry B. Lovell, Mr. and Mrs. F. P. Lloyd, John M. Holmes, Mr. and Mrs. Charles Feehan, William E. O'Brien, Miss Ethel O'Brien, Mr. and Mrs. James O'Brien, George H. Brice, Mr. and Mrs. Waldo Leland, Mrs. Irene Potter, Mr. and Mrs. C. A. Gregory, J. S. Mead, Mr. and Mrs. K. W. Massey, Dr. and Mrs. John A. Heberling and Mrs. Byers Fletcher;

Dr. and Mrs. William Krumbhaar, Sir Henry Braden, Dr. and Mrs. F. C. Coxon, Miss Joyce Greig, Mr. and Mrs. Sylvan Bier, Mr. and Mrs. Norman A. Bailie, Mr. and Mrs. Philip Dickinson, A. L. Arnsworth, W. R. McLachlan and Mr. and Mrs. B. B. Hillman.

Liner New York Brings Many Americans Today

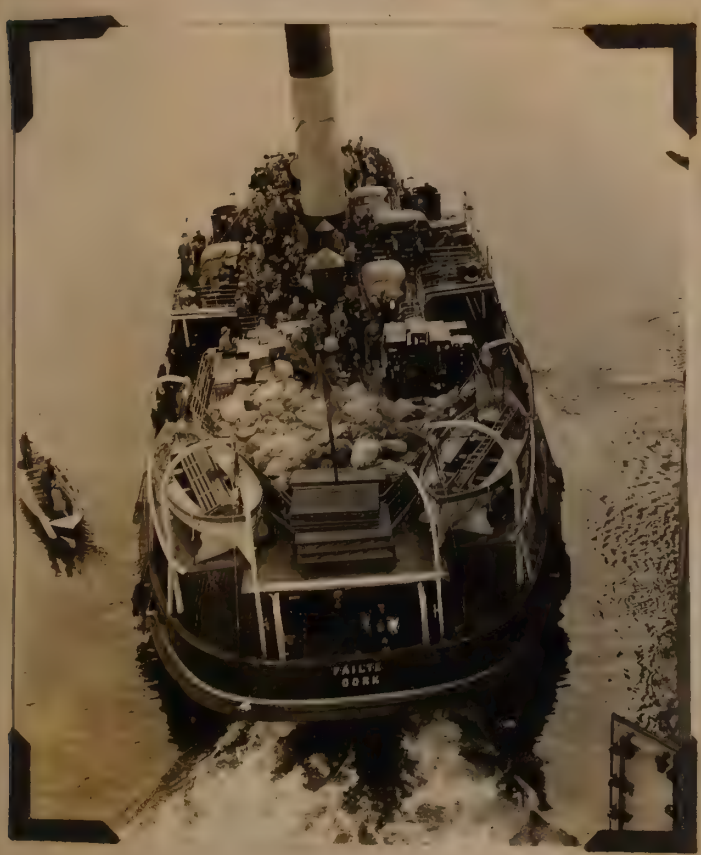
Prominent Passengers Scheduled To Dock at Cherbourg

Many Americans are arriving for their summer visit to the Continent on the Hamburg-Amerika liner New York, which docks at Cherbourg today. Among the prominent passengers aboard are: Dr. Ira Williams, of the Du Pont Company; Shephard Morgan, vice-president of Chase National Bank; M. B. Cooke, of the American Locomotive Company, and Mrs. Cooke; R. F. Lange, German Consul at Honolulu, and Baron and Baroness Frederich von Lupin.

Other important passengers on the New York include: Mr. and Mrs. F. Benedick, Miss Anna Guye, Mr. and Mrs. Arthur Alkier, Ferdinand Schermann, Mr. and Mrs. W. Kroeger, Dr. Herman Karnbach, Mrs. Anna Holzmann, Mr. and Mrs. J. Huebener, William Bode, John V. Hanson, Dr. and Mrs. William Nitze, Carl Behnek, Max Heed and Dir. Adolf Vock.

Other notables who crossed were: Mrs. Lester Barr, Dr. H. Beller, Mr. and Mrs. H. Cabot, Walter Cuntz, Julius Doring, Werner Duchrow, Mr. and Mrs. Max Fleming, Dr. and Mrs. Colin Fink, Mr. and Mrs. Edward Mendel, Mrs. A. G. Olney, Heinrich Quade, Dr. Johann Reichert and Miss S. Roblin;

Mrs. H. H. Spaulding, Richard Gelbke, Dr. Lutz Gocke, Dr. and Mrs. H. P. Groll, the Rev. J. M. Lavelle, Mr. and Mrs. Kurt Lindener, Mr. and Mrs. V. F. von Lossberg, Albin Thomas, Albert Veit and Randolph St. George Walker.



Cobh

Cobh

LeHavre to Paris

On this trip we passed through a very pleasant countryside, largely scattered farms. Most of the soils appeared to be of the Gray-Brown Podzolic type, with occasional spots of Rendzina. General farming with a fair amount of dairying is practiced. Here the cattle are pastured on well advanced mixed grasses and legumes usually and are staked out in rows across the fields. Steep land and other land unsuitable for crops is used for forests under careful management, so it appeared.

Versailles

The national center for agronomic research is located very near Versailles. Most of the buildings are near and conveniently arranged, although the plant seems somewhat small for so large a country.

Figure 1. Soil laboratory at the Versailles agronomic research center.

Figure 2. Mr. Demolon, right, Director of Agronomic and Soil Research in France. Mr. G. Aubert, left, soil scientist at Versailles. Profile from loess in the background near Feucherolles.

Standard experiments are in progress regarding questions of soil fertility, agricultural meterology, genetics, and so on. I noticed two rather interesting experiments in the field: (1) Field trials with malting barley showed that a little nitrogen had the effect of lowering the nitrogen content (percentage) in the harvested crop; and (2) an experiment using small lysimeters to determine the influence of various depths to the water table upon wheat. It would be interesting to elaborate this experiment to include various types of salty water. Considerable attention is being given to soil structure, but I noted no progress. Considerable attention was being given to soil microbiology, but largely old routines.

At this experiment station, as well as at the other stations, the staff members are very poorly paid, less than one-half as well as American scientists of similar ability.

The station has a good library. Our Soil Survey Manual was being translated into French for the use of the staff. Unfortunately there is only informal cooperation between the work in France and the colonies. The present agricultural ministry is largely interested in economic questions and the scientific work is being shamefully neglected.

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n° 16 -- novembre 1937

LE CLIMAT DU SOL

par A. DEMOLON
Inspecteur général des Stations de Recherches agronomiques

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secrétariat de l'association
28, rue serpente (6e)
Paris

LE CLIMAT DU SOL

par A. DEMOLON
Inspecteur général des Stations de Recherches agronomiques

Le concept du climat du sol

Le développement de la Pédologie qui étudie le sol en lui-même et pour lui-même, l'évolution de la science du sol qui de nos jours a conquis son autonomie, devaient naturellement conduire à envisager le climat propre du sol. C'est là un concept d'actualité qu'il est nécessaire d'analyser et de soumettre à la critique scientifique.

Nous rappellerons, tout d'abord, que les fondateurs de la Pédologie qui mirent en évidence le rôle du climat dans la formation des sols (Dokoutchaeff, Sibirtseff) et énoncèrent la loi de zonalité de leur distribution (Glinka) ont pris simplement en considération le climat géographique (pluie-température). Plus tard, la science du sol s'est préoccupée plus directement des rapports du sol et de l'atmosphère [Ramann (1) 1911, Puchner (2) 1923, Vilensky (3) 1925, Schucht (4) 1930, Agafonoff (5) 1936]. D'autre part, l'écologie et la géobotanique ont montré l'utilité d'observations portant sur des espaces limités [G. Krauss (6) 1911; R. Geiger (7) 1930]. Enfin, récemment, V. Novak (8) discute, dans son essence même, la question du climat du sol en tant que forme plus ou moins modifiée du climat atmosphérique; en même temps, Scaetta (9), dans une étude sur la genèse des sols montagnards de l'Afrique Centrale, apporte une contribution directe au problème posé; en particulier, il met en évidence la différence de régime thermique propre aux sols de la série siallitique (limons) et à ceux de la série allitique (latérites).

On constate donc qu'une orientation nouvelle des études relatives au climat tend à se manifester dans le cadre de la science du sol. Je m'empresse d'ajouter qu'on ne saurait parler de problèmes à proprement parler nouveaux. Physiciens et météorologistes se sont toujours préoccupés de mesures relatives au sol. Qu'il me suffise de rappeler l'œuvre déjà ancienne de Becquerel, Marié-Davy, Duclaux, Houdaille, Angot et celle de leurs successeurs actuels. Seul a varié l'angle sous lequel sont étudiés les phé-

nomènes, le sol ayant cessé d'être considéré comme un support inerte pour apparaître comme un milieu dont l'évolution continue est fonction d'un ensemble de processus qui sont eux-mêmes liés au climat.

Notre rapport sera donc surtout destiné à préciser comment il convient d'envisager le climat du sol dans l'état actuel de nos connaissances et à provoquer sur ce sujet une discussion utile pour l'avenir.

Mais il nous paraît tout d'abord nécessaire de proposer une définition du climat du sol. Celui-ci peut être considéré comme la *réaction du sol à l'ensemble des conditions atmosphériques locales*; il en est la résultante. On voit donc de suite que son étude ne peut être séparée de celle des couches inférieures de l'atmosphère, elles-mêmes directement influencées par le sol. En définitive, le climat du sol dépendra essentiellement : 1° du climat limité à un espace restreint et uniforme; 2° du sol lui-même qui se comportera différemment suivant sa situation topographique (exposition), sa constitution physique (structure, perméabilité), sa couverture, etc... Ces causes de variation nous montrent qu'il est insuffisant de considérer le climat du sol sous l'aspect zonal ou même régional et qu'il y a lieu de définir en outre un climat local ou individuel.

Intérêt de la connaissance du climat du sol

C'est un fait aujourd'hui admis que le climat joue un rôle fondamental dans les processus de formation et d'évolution du sol; nous avons constaté (10) qu'un granite grossièrement broyé et abandonné sous notre climat aux conditions naturelles en cases lysimétriques donne lieu en quelques années à une désagrégation allant jusqu'à la formation de colloïdes sans l'intervention des sources d'énergie mécanique mises en jeu au cours des phénomènes de transport, c'est-à-dire sous la seule influence des forces développées par la chaleur et l'humidité. C'est la pluie et la température qui déterminent les processus d'altération des roches et l'évolution de la matière organique. Ces phénomènes acquièrent leur maximum d'intensité dans la zone intertropicale. Enfin les mouvements de substances à l'état dissous ou dispersé sont liés à la circulation de l'eau *per ascensum* (évaporation) ou *per descensum* (infiltration). Ces migrations ont pour conséquence la différenciation du profil du sol en horizons.

On a donc été conduit à baser la classification des sols sur le climat et à utiliser à cet effet divers indices adoptés par les géographes, comme celui de Lang, quotient de la chute de pluie en millimètres par la température moyenne annuelle, celui de Meyer, quotient de la chute de pluie par le déficit de saturation

à la température moyenne annuelle, ou enfin l'indice d'aridité de de Martonne. Qu'il me suffise de dire ici que ces indices n'ont qu'un intérêt d'ordre général et qu'ils ne conduisent pas à une classification absolument satisfaisante, une même valeur pouvant correspondre à des sols de groupes différents. Cela tient pour une large part à ce que le climat géographique peut être fort différent du climat pédologique. La forêt peut, par exemple, transformer un climat semi-aride en un climat du sol suffisamment humide pour provoquer la dégradation du tchernozem. De même, à de faibles variations topographiques peuvent correspondre, sous un même climat, des différences marquées dans l'intensité et la nature des processus pédogénétiques. De là, l'existence de sols qui échappent en apparence à la loi de zonalité. C'est ce qui s'observe très fréquemment en France lorsqu'on procède à la cartographie des sols à une échelle suffisamment fine pour qu'elle intéresse l'Agriculture. La grande variété de nos sols est liée non seulement à celle des roches mères, mais aussi et dans une large mesure à la diversité des conditions locales, c'est-à-dire aux microclimats. On comprend donc l'intérêt que présente pour le pédologue la connaissance du climat du sol lui-même.

Cet intérêt n'est pas moindre pour l'agronome; il est considérable pour le colon qui s'installe dans une région où il ne peut bénéficier de l'expérience traditionnelle. Assurément, la climatologie de l'atmosphère définit l'ambiance propre aux organes aériens; elle conditionne directement divers processus physiologiques comme le débourrage de la vigne et le bourgeonnement des arbres fruitiers, les phénomènes de maturation ou le développement de certaines maladies; mais dans beaucoup d'autres cas, le rôle essentiel revient au sol. Celui-ci reflète beaucoup plus fidèlement que l'air l'action de la radiation solaire. De la période du réveil de la terre jusqu'à celle de la récolte, chaleur et humidité règlent le développement de la plante, de même qu'ils conditionnent la vie microbienne, c'est-à-dire l'évolution de la matière organique. Souvent l'eau en particulier constitue le facteur qui limite la végétation.

En resserrant la question, on est amené à considérer que c'est l'ensemble du sol et de son climat qui définit l'adaptation du milieu à une culture, c'est-à-dire ce qu'on nomme les terroirs. L'obtention de produits de qualité spécifique qui caractérise un crû résulte de l'association d'une variété végétale à un milieu physique particulièrement favorable. Ce milieu trouve sa meilleure expression dans le type génétique, parce que celui-ci est précisément la résultante de l'action du climat sur les diverses roches mères.

Quel que soit le point de vue auquel on se place, on constate donc que ce sont les deux facteurs, chaleur et humidité, auxquels revient le rôle essentiel. Nous ne pouvons passer ici en revue l'ensemble des résultats acquis à cet égard, nous nous bornerons à exposer quelques points qui nous paraissent fondamentaux dans l'étude du climat du sol tel que nous venons de le définir.

Le sol au point de vue thermique

A. — *Propagation de la chaleur dans le sol.*

Il y a lieu d'examiner tout d'abord comment le sol réagit à l'onde thermique, c'est-à-dire comment se présente le problème de la propagation de la chaleur dans le milieu sol. Celui-ci, en raison de son hétérogénéité et de sa discontinuité, diffère profondément des milieux étudiés par les physiciens. Néanmoins, sans exagérer la valeur pratique de la relation de Fourrier, on peut considérer qu'elle nous fournit une base de discussion. Elle nous indique qu'à une distance x de la surface, les variations de température θ, en fonction du temps t, s'exprime par la relation : $K \frac{d^2 \theta}{dx^2} = c \frac{d\theta}{dt}$ dans laquelle K est le coefficient de conductibilité du sol et c la chaleur spécifique rapportée à l'unité de volume du sol en place. Voyons dans quelle mesure ces deux coefficients vont affecter l'échauffement du sol quand le flux calorifique est le même, mais quand les conditions de milieu varient.

On doit remarquer que les différents constituants minéraux des sols présentent entre eux, au point de vue conductibilité ou chaleur spécifique en volume, des différences de faible importance. La couleur est également un élément accessoire. C'est avant tout la structure qui intervient en modifiant : 1° la porosité, c'est-à-dire la proportion des espaces lacunaires occupés par l'air et l'eau; 2° l'importance des contacts entre les éléments solides.

La conductibilité de l'air est environ vingt fois moindre que celle de l'eau; celle-ci est deux à trois fois inférieure à celle des éléments minéraux pris à l'état de roches compactes, mais supérieure à celle des particules minérales des sols dans leur état de tassement naturel.

	Conductibilité (c.g.s.)
Air.	0,00025
Eau.	0,0051
Eléments minéraux :	
Roches compactes	0,010 à 0,015
Roches pulvérisées	0,00015 à 0,00030

Ces différences entraînent la possibilité de larges variations de la conductibilité des sols. En effet, si la porosité des sols au repos

oscille entre des limites assez resserrées (30 à 40 %), celle des sols cultivés peut atteindre des chiffres beaucoup plus élevés et dépasser 60 %. Le travail du sol qui en fait un milieu très aéré tend à diminuer sa conductibilité; il diminue aussi son pouvoir diffusif et accroît ainsi son aptitude à régulariser sa température. La série d'observations de Tunis (Bœuf) (11), prolongée jusqu'à 1 mètre de profondeur, nous montre que les amplitudes sont un peu plus fortes dans le sol au repos que dans celui qui a été travaillé. Voici, d'autre part, à l'appui de cette même notion, quelques résultats montrant qu'un sol récemment travaillé se refroidit uniquement par sa surface, tandis que le même sol, à l'état compact, perd beaucoup plus vite vers le haut sa chaleur interne.

Température le 11 mai 1928 à 19 heures avant une nuit de gelée	Influence du travail du sol sur sa température (W. Schmidt 1928) (12) — récemment travaillé	travaillé depuis 3 semaines	non travaillé
En surface	5°0	8°5	10°8
A 10 cm.	12°4	9°9	9°8

Inversement le tassement accroît la conductibilité en amplifiant les contacts entre les particules solides. Le fait a été vérifié expérimentalement au laboratoire par R. Failletaz (13) qui a noté une augmentation continue de la conductibilité pour des compressions allant de 100 à 2.000 gr. par cm². On sait, par exemple, que plus un sol est compact et plus la gelée y pénètre profondément. En définitive, retenons qu'un même sol à l'état meuble ou tassé se comportera différemment en ce qui concerne la distribution de sa température en profondeur.

Il est un autre facteur susceptible de modifier profondément les conditions d'échauffement ou de refroidissement des sols, c'est l'humidité. Le tableau ci-après nous montre que la chaleur spécifique de l'eau est environ cinq fois plus élevée que celle des divers constituants du sol à l'état sec, d'où le rôle prépondérant du degré de saturation.

	Chaleur spécifique en volume (cal. par c/c) (d'après Mitscherlich) — à l'état sec	à l'état humide 1/2 saturation	à saturation
Sol sableux	0,302	0,510	0,717
— argileux	0,240	0,532	0.823
— humifère	0,148	0,525	0,902

Cette influence de l'humidité nous explique que les variations

thermiques du sol ne présentent qu'un coefficient de corrélation assez faible avec l'insolation.

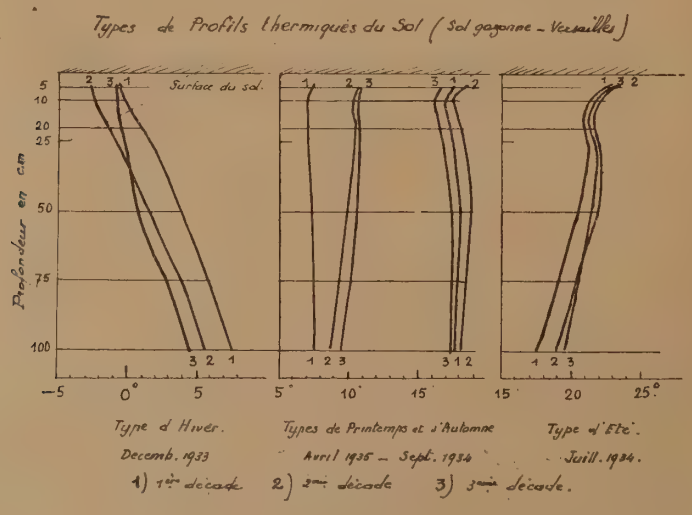
En définitive, le coefficient $\frac{K}{c}$ de la formule de Fourrier commence par croître avec l'humidité par suite de l'augmentation de K relativement plus grande que celle de C, il passe par un maximum puis décroît de façon continue par suite de l'accroissement de la chaleur spécifique. L'étude de ces courbes par Patten (14) a fixé le maximum à 7 % d'eau dans le cas d'un sable quartzeux grossier et à 13 % dans le cas d'un limon sableux.

Pour nos régions, le sol à faible profondeur constitue un milieu sensiblement plus chaud que ne l'indiquerait la température de l'air prise sous abri dans les conditions habituelles. Brazier (15) fixe cet excès à 0,52 en surface et 0,82 à 1 m. pour la région parisienne. B. A. Keen et E.-J. Russell (16) à Rothamsted indiquent à 15 cm. de profondeur un excès de 3 à 5° C. en été mais beaucoup plus faible en hiver. Voici sur ce point les observations de la Station de Climatologie de Versailles donnant un excès moyen de 1°4 à 5 cm.

	Température moyenne annuelle				
	1932	1933	1934	1935	1936
	—	—	—	—	—
A l'air sous abri (2 m.).....	10°0	10°7	10°0	10°6	10°3
Sol gazonné à 5 cm. de profondeur	11°3	11°8	11°9	11°9	11°8

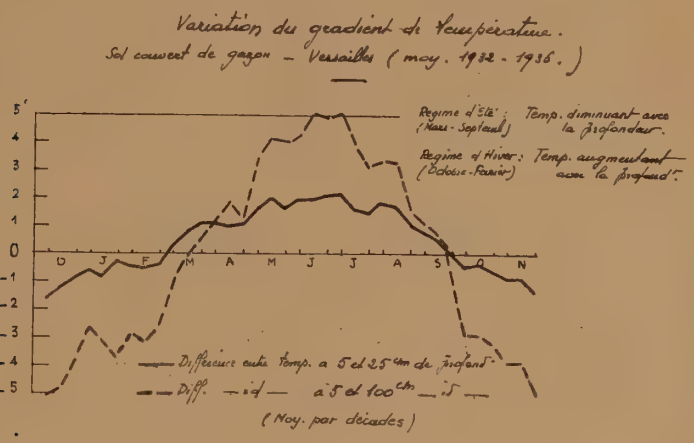
Les observations thermométriques doivent surtout porter sur les deux points suivants :

1° *Distribution en fonction de la profondeur.* — Ce résultat est obtenu par le relevé de *profils thermiques* correspondant à la zone verticale qui intéresse à la fois les pédologues et les agronomes. En voici un exemple concernant Versailles.



La distribution de la température en profondeur varie avec la latitude. Dans la zone tropicale par exemple, les températures moyennes annuelles à une profondeur de 1 m. 50 peuvent dépasser de plus de 10° celles de nos régions tempérées.

Les profils mettent en lumière la variation du gradient de température (Diagr. 2). En négligeant la couche superficielle du sol (0-5 cm.) on constate que, dans nos régions, la température décroît de mars à septembre quand la profondeur augmente (gradient positif en été). C'est le contraire qui a lieu d'octobre à février (gradient négatif en hiver). Il y a donc une période de transition au cours de laquelle la distribution tend à s'uniformiser. L'époque de cette inversion du gradient est un élément de carac-



risation du climat du sol. Elle s'observe à Versailles en moyenne au cours de la deuxième décade de mars et de la troisième décade de septembre avec une fluctuation suivant les années de une ou deux décades. Quant à l'écart de température, il peut atteindre en moyenne ± 2°0 entre 5 et 75 cm. et ± 5°0 entre 5 cm. et 100 cm. Eblé (17) a indiqué comment on peut tirer parti des résultats expérimentaux et calculer un coefficient de propagation qui est loin d'être constant.

2° *Amplitude des variations*

L'amplitude de la variation journalière en surface dépend dans une très large mesure de la nature du sol et du mode d'observation. Elle comporte une certaine incertitude due à la difficulté d'obtention de résultats rigoureux. Les observations du Parc Saint-Maur (mars 1934 à février 1935) en sol gazonné ont donné à 2 cm. de profondeur une température de 13,67, supérieure de 1°70 à celle de l'air au contact du sol (3 cm.). Les observations effectuées en Afrique orientale (Vageler) ou aux Indes

(Leather) indiquent que le maximum à la surface du sol peut dépasser de 20° le maximum de l'air, d'où une amplitude considérable des variations journalières — mais à mesure que la végétation devient plus dense, les températures superficielles du sol se rapprochent de la moyenne annuelle de la température de l'air.

Quant à l'amplitude de la variation annuelle, elle présente plus d'intérêt car elle peut être considérée comme périodique.

Enfin le déplacement comparé de l'époque des maxima et des minima dû au temps nécessaire à la propagation de l'onde thermique, représente un élément caractéristique du milieu que la climatologie du sol doit prendre en considération.

Influence des conditions d'observation : La couverture du sol modifie le comportement du sol au point de vue calorifique. Scaetta cite le cas d'un sol couvert de lapilli (verres volcaniques) dans une plantation de caféiers. La température de l'air à l'ombre à 13 heures étant de 21°3, celle à la surface du sol nu oscillait entre 27°3 et 28°, à l'ombre des caféiers elle n'était que de 25°. Par contre, le sol couvert de lapilli donnait 33°5 à 36°5 et les caféiers y étaient grillés. Quant à la couverture avec les papiers spéciaux parfois utilisés en horticulture, elle agit à la fois sur l'humidité et sur la température. A Versailles, elle amortit les oscillations avec une légère augmentation de la moyenne journalière (J. Servy) (18).

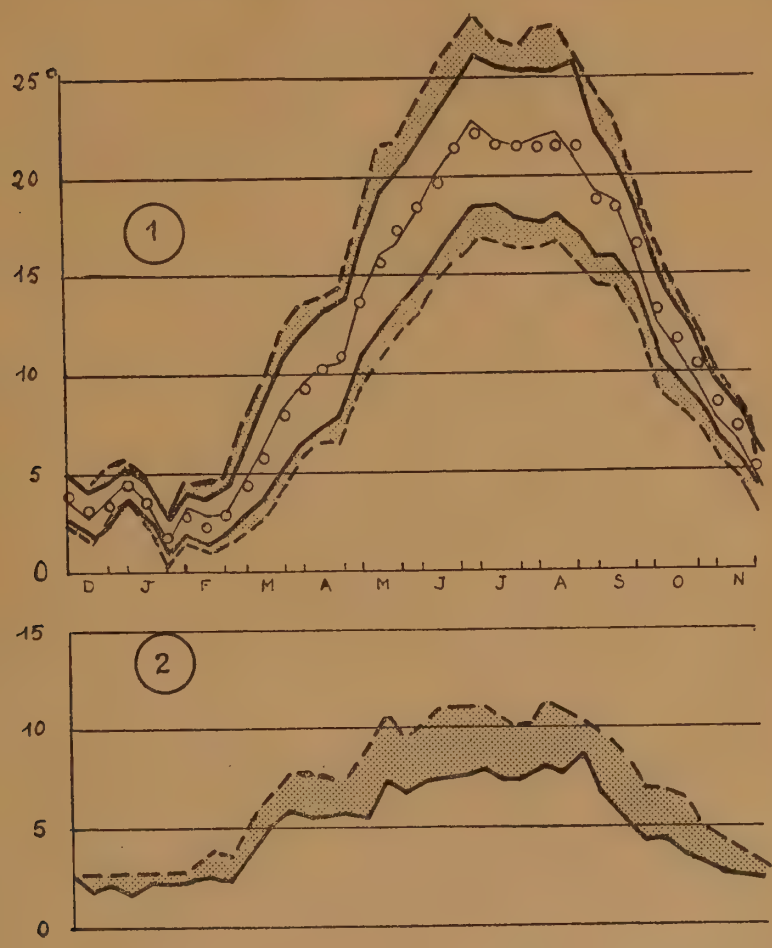
Bref, il résulte des faits précédemment exposés qu'il est fondamental de définir les conditions de milieu dans lesquelles sont faites les observations. C'est là un point qui n'a pas retenu suffisamment l'attention jusqu'ici. Il semble que de suggestives corrélations pourraient en résulter. C'est ainsi que récemment Scaetta constatait en Afrique Centrale que les sols siallitiques différenciés se distinguent des allites plus évoluées et homogènes. Pour les premiers la variation annuelle est amplifiée; l'onde calorifique est amortie et la couche la plus chaude se situe près de la surface. Pour les allites la variation annuelle déjà très faible ($<2°$) n'est pas amplifiée, l'amortissement des oscillations est moindre et la couche la plus chaude se situe plus profondément. Des observations de ce genre ont un grand intérêt.

Comme sol de référence, il paraît indispensable de prendre un sol abandonné au repos pendant un temps suffisamment long. Si la surface de ce sol est gazonnée, ce qui chez nous présente certains avantages, il importe de savoir que si dans ces conditions les températures moyennes sont sensiblement équivalentes à celles relevées en sol nu, par contre l'amplitude de la variation journalière se trouve réduite par rapport au même sol nu. En été, l'amplitude max.min. atteint en moyenne 11° en sol nu contre 8°

en sol gazonné, en hiver les différences sont faibles et peuvent même changer de sens.

Le rapport des amplitudes dans les observations de Geslin à Versailles, à 5 cm. de profondeur, varie de 1 à 2 (valeurs extrêmes

Variations comparées de la Température en Sol nu & en sol gazonné à 5 c/m de profondeur — Versailles (moyenne 1932-36).



1 { Température max et min (moy. par décades) — Sol nu. — Sol gazonné
Temp. moyennes (par décades) — sol nu — o o o Sol gazonné

2 Amplitude de la variation max — min. — Sol nu — Sol gazonné

0,9—2,2). Ce rapport ne présente aucune corrélation nette avec l'humidité. Il est donc lié à l'état même de la surface et à la modification de l'albedo dû à la végétation. Aussi, dans certains cas (sols forestiers, sols vierges) il paraît souhaitable que les obser-

vations portent sur le sol muni de sa couverture naturelle. Jusqu'ici les données utilisables que nous possédons sont trop restreintes et trop peu comparables pour que leur interprétation conduise à préciser la climatologie propre aux divers types de sols définis en Pédologie.

Enfin nous signalerons que le plus souvent il nous manque un élément fondamental auquel les indications thermométriques ne peuvent suppléer, c'est la mesure directe de la radiation calorifique globale. Son importance a été soulignée par Ch. Maurain (19).

Humidité des sols

La pluie constitue la principale source de l'humidité des sols. On conçoit aisément que la hauteur annuelle de pluie soit insuffisante pour caractériser le degré d'humité ou d'aridité d'un sol. En saison sèche les averses peuvent atteindre plusieurs millimètres sans gain pour le sol qu'elles peuvent même assécher. D'autre part, en raison du ruissellement, une fraction des pluies échappe à l'infiltration. Cette fraction est d'autant plus importante que les sols sont plus imperméables et que les pluies sont plus intenses. Pour l'ensemble du bassin de Paris, cette perte par ruissellement est évaluée à 28 %, elle est plus considérable dans la région de Montpellier où les pluies torrentielles sont fréquentes. Aussi divers auteurs ontt-ils proposé d'introduire une facteur de correction pour se rapprocher de la quantité réellement absorbée par le sol, compte tenu de la vitesse de chute de la nature du sol (Chaptal) (20). Nous avons ainsi une mesure de la quantité d'eau gagnée. Celle-ci se répartit en trois fractions : *a*) une partie traverse le sol et s'infiltre dans les couches profondes jusqu'à la nappe phréatique — c'est ce qu'on désigne souvent sous le nom d'eau de drainage. Son importance mesure le *degré de lessivage du sol,* considération essentielle en pédologie; *b*) une partie est évaporée soit directement soit par la transpiration des végétaux; *c*) une autre reste emmagasinée par le sol et dépend de sa capacité de rétention. L'économie de l'eau apparaît donc sous forme d'un bilan qu'on peut établir de différentes façons.

L'*évaporation* du sol a été étudiée directement au laboratoire en tant que problème purement physique. Le sol étalé en couche mince était placé dans une atmosphère limitée en présence d'acide sulfurique pour absorber la vapeur d'eau. Cette étude a montré que pendant un certain temps la variation en fonction du temps est sensiblement la même, puis à partir d'une certaine teneur beaucoup moins élevée pour les sables que pour les sols bien pourvus en colloïdes et qui est voisine de l'équivalent d'hu-

midité (Keen, 24), l'eau est retenue d'autant plus énergiquement qu'il y en a moins. A l'état saturé un sol évapore comme la même surface d'eau libre à la même température. Le problème de la dessiccation des sols en place se présente dans des conditions beaucoup plus compliquées en raison des causes diverses susceptibles de modifier la dynamique de l'eau (état de la surface, vitesse de la circulation *per ascensum*, etc...).

Nous n'avons pas jusqu'ici de méthode commode permettant de suivre les variations de l'humidité dans un sol en place et nous sommes obligés d'avoir recours au dosage direct sur des échantillons prélevés à cet effet; c'est là une lacune fort regrettable. Il est évident que les évaporomètres ne nous fournissent qu'une mesure du pouvoir évaporant de l'atmosphère (21). Toutefois, nous signalerons qu'à Versailles Geslin (22) a étudié et défini la relation $\frac{E}{Es} = f\,(H)$ exprimant la variation du rapport du pouvoir évaporant de l'air E et de celui du sol Es en fonction de l'humidité du sol suivie expérimentalement. De même, Servy (23) a pu, à partir des pluies P et de l'évaporation E, définir un indice présentant une corrélation étroite avec l'humidité. Si intéressantes que soient ces observations comme caractéristiques climatiques de la sécheresse, on peut leur reprocher de n'introduire aucune caractéristique du sol lui-même; elles demandent donc à être précisées à ce point de vue.

La méthode la plus directe pour l'étude du bilan de l'eau est celle des *lysimètres*. On nomme ainsi des cases étanches renfermant des blocs de terre d'épaisseur variable et munies d'un fond permettant de recueillir les eaux d'infiltration. Ces cases sont immergées dans le sol et exposées aux conditions naturelles. Leur inconvénient réside dans la suppression des couches inférieures dont le rôle n'est pas négligeable. Des cas de ce genre fonctionnent depuis 1928 au Centre de Recherches de Versailles. D'autres ont été mises en service plus récemment en Tunisie et au Maroc. Voici à titre d'indication quelques résultats relevés à Versailles, pour un sol de limon, ainsi qu'à Tunis et à Rabat.

Observations en cases lysimétriques

	1932		1933		1934		1935		1936	
	nue	cultivée	nue	cultivée	nue	cultivée	nue	cultivée	nue	cultivée
Pluie (P)	492.7		407.5		544.8		641.9		741.8	
Drainage : en mm...	202.8	123.7	132.5	86.0	146.6	108.8	231.2	178.4	382.8	308.6
% de P.	41.1	25.1	32.5	21.1	26.9	20.0	36.0	27.2	51.6	41.6
Evaporation : en mm.	289.9	369.0	275.0	321.5	398.2	436.0	410.7	463.5	359.0	433.2
% de P.	58.9	74.9	67.5	78.9	73.1	80.0	64.0	72.3	48.4	58.4

	Tunis (M. Bœuf) 1er sept. 1934-15 août 1935 (Prof. 2 m.)		Rabat (M. Miège) Prof. 1 m. 1934-1935		1935-1936	
Pluie (P)	638.8		359.3		648.6	
	Nue	Cultivée (blé)	Tirs	R'Mel	Nue	R'Mel 5 Cultivée (blé)
Drainage :						
en m/m	302.6	240.0	139.4	174.0	242.6	201.0
% de P	47.4	37.4	42.3	53.0	37.4	31.0
Evaporation :						
en m/m	336.2	398.8	219.9	185.3	406.0	447.6
% de P	52.6	62.6	57.7	47.0	62.3	69.0

Nous voyons que dans le cas de la terre nue 30 à 40 % de pluie s'infiltre dans les couches profondes; le reste, c'est-à-dire la plus grande partie s'évapore. Ce rapport est peu modifié dans l'Afrique du Nord en raison de l'absence de pluies de mai à fin septembre. Il est très important de noter que par comparaison avec le sol nu, la culture n'a accru cette perte par évaporation que d'une quantité relativement faible (17 % en moyenne), très inférieure à celle correspondant à la matière sèche formée. La culture réduit donc considérablement l'évaporation propre du sol. C'est ce que Chodat a appelé la fonction « écran » de la végétation.

Signalons que la méthode lysimétrique nous fixe en outre sur les périodes de suspension du drainage, auxquelles correspond un changement dans le sens de la circulation dans le sol. Cette suspension plus ou moins complète s'observe à Versailles d'avril à fin octobre.

On a pu estimer que dans les régions arides l'ameublissement superficiel (dry farming) peut réduire de 50 à 60 % la déperdition d'humidité au cours de la saison chaude. A Versailles, nous avons pu constater que la sécheresse des années 1932-33-34 n'a guère affecté que les 10 cm. superficiels. Au Maroc, les observations de Miège (25) nous montrent que dans un sol sableux R'Mel l'humidité peut descendre à 3,5 % en avril, tandis qu'à la même époque un sol de Tirs renferme à la même profondeur 17,4 %. Dans le premier cas, les différences relevées aux diverses profondeurs sont très accusées jusqu'à 90 cm. aux diverses périodes.

Bien que pour les sols cultivés l'évaporation soit très inférieure à celle du sol nu augmenté de la quantité d'eau correspondant à la transpiration végétale, la culture contribue puissamment à la dessiccation du sol. Les résultats ci-dessous montrent l'importance variable de cet assèchement suivant les années.

Observations sur l'humidité du sol (Versailles)

Humidité % de terre sèche (sol nu et sol cultivé)

Profondeur	16 juin 1934			8 août 1935			16 juin 1936			
	sol nu	blé	betterave	sol nu	blé	betterave	sol nu	blé	betterave	pomme de terre
0-15 cm		7,5	10,9	11,1	6,5	4,9	22,4	13,3	20,6	20,0
15-30	19,7	7,5	15,5	17,7	11,8	7,7	23,9	14,4	23,8	22,2
30-45		14,7	20,2	24,1	16,2	10,0	24,8	17,5	24,2	22,4

Ce fait est plus apparent dans les observations effectuées par M. Bœuf (26) en Tunisie dans des conditions où la végétation se développe au cours de la période sèche uniquement aux dépens des réserves d'eau emmagasinées par la jachère.

Enfin il est important de noter que dans les sols en place il peut exister des sources accessoires d'humidité liées : 1° à l'action de la force de succion quand à faible profondeur existe une zone saturée; 2° aux condensations internes résultant de différences de température entre l'atmosphère et le sol et entre différentes couches du sol (Chaptal (27), Dienert (28), Lebedeff (29). Celles-ci semblent intéresser surtout les régions méridionales.

Au point de vue de la climatologie, nous conclurons des faits exposés à la nécessité de développer des méthodes d'observations directes qui, pour chaque type bien caractérisé, conduisent à une expression des variations dans le temps de son état d'humidité en fonction des gains et des pertes. En particulier, il est recommandable de relever des profils hydriques homologues des profils thermiques, l'eau étant exprimée % de la capacité de rétention. On pourra ainsi apprécier la résistance des sols à la dessiccation, la distribution de l'humidité dans les divers horizons au cours de l'année, enfin les périodes au cours desquelles la circulation s'effectue *per ascensum* ou *per descendum*.

Conclusions. — En résumé, la documentation que nous possédons concerne davantage la physique du sol que sa climatologie proprement dite; celle-ci nécessite avant tout une définition précise du milieu. C'est là une différence essentielle avec la climatologie atmosphérique. A cet égard, l'évolution de la science du sol permet d'envisager les problèmes posés de façon plus compréhensive de leur véritable nature. Il faut tout d'abord faire choix de sols de référence, constitués par des sols type bien connus et zonaux. A côté de leur profil pédologique, on relèvera leur profil thermique et hydrique jusqu'à une profondeur qui atteindra la roche-mère chaque fois que cela sera possible. Ces trois profils nous paraissent constituer les bases de la climatologie du sol.

Il y a lieu d'autre part de préciser et d'unifier les méthodes d'observations de façon à permettre la comparaison des résultats en des points différents. On devra enfin s'efforcer de déterminer les principes généraux permettant de passer du climat type à celui d'un sol particulier et d'étendre le bénéfice des observations aux sols cultivés. Bref, la climatologie du sol s'appuyant à la fois sur la physique du sol et la pédologie, doit fixer la méthode adéquate à ses buts propres.

D'un point de vue général, le sol ne saurait être isolé des cou-

ches inférieures de l'atmosphère avec laquelle il présente des relations d'interdépendance. Il serait donc préférable de partir du *climat de la biosphère,* c'est-à-dire d'une zone comprise entre deux limites, dont l'inférieure appartient au sol et la supérieure à l'atmosphère.

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ACADÉMIE D'AGRICULTURE DE FRANCE

RECHERCHES SUR LA FERTILISATION EFFECTUÉES EN 1937 PAR LES STATIONS AGRONOMIQUES

PAR

M. A. DEMOLON

IMPRIMERIE ALENÇONNAISE
PLACE DU COURS
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1938

ACADÉMIE D'AGRICULTURE DE FRANCE
Extrait du procès-verbal de la séance du 11 mai 1938

RECHERCHES SUR LA FERTILISATION EFFECTUÉES EN 1937 PAR LES STATIONS AGRONOMIQUES

PAR

M. A. DEMOLON

J'ai l'honneur de déposer sur le bureau, le XIe Rapport annuel exposant les recherches sur la fertilisation effectuées en 1937 par les stations agronomiques. Ces travaux dont la conception et l'organisation sont dues à nos confrères, MM. E. Roux et G. Bertrand, constituent un exemple de recherches dirigées et concertées, méthode qui s'impose en vue d'aboutir à des conclusions pratiques susceptibles de guider l'agriculteur.

Dans l'emploi des engrais, il n'y a pas de règles absolues, mais uniquement des *probabilités* et nous considérons comme recommandable une technique qui pourra ne se montrer avantageuse que huit fois sur dix au cours des années. Les conditions climatiques peuvent en particulier modifier considérablement l'action d'une même fumure ; aussi les résultats d'une année sont-ils de peu de valeur ; la continuité des observations est indispensable pour qu'on puisse en tirer des enseignements.

A cet égard la plus longue série est celle de Rothamsted où les expériences au champ instituées par Lawes et Gilbert en 1843 ont été régulièrement continuées

depuis près d'un siècle. A la Station d'Askov, dans le Jutland, on montre au visiteur des graphiques relatifs à des expériences poursuivies depuis plus de cinquante ans sur l'action comparée du fumier et des engrais chimiques. A Grignon, le champ d'expériences créé par Dehérain en 1875 a connu quelques vicissitudes, mais il a pu être préservé ; il comporte soixante-huit parcelles dont certaines ont été maintenues sans engrais depuis l'origine ; nous pouvons ainsi suivre l'épuisement du sol avec le temps. A cet égard j'extrais du Rapport annuel les chiffres suivants, montrant que l'épuisement se ralentit avec le temps et qu'il se manifeste d'autant plus que la plante cultivée est susceptible d'une production plus élevée en matière sèche à l'hectare.

Champ d'expériences de Grignon (1937, M. Guérillot)

	Blé (grain)		Betteraves ½ sucrières	
	Qx par ha.	Indices de comparaison	Qx par ha.	Indices de comparaison
Sans engrais depuis 1875	11,6	46	89	28
— 1902	14,0	55	120	37
— 1931	16,4	65	202	63
Engrais complet.. . .	25,4	100	321	100

Que nous ont appris les recherches récentes effectuées en France ?

Il y a assurément fort longtemps qu'on obtient empiriquement, des engrais, des résultats avantageux ; mais si leur consommation s'est accrue, la technique de

leur emploi a beaucoup moins progressé ; il manquait en effet une doctrine de la fertilisation étayée sur des faits expérimentaux bien établis. Or, nous pouvons aujourd'hui compléter les lois générales énoncées par Liebig en 1840, par un certain nombre de principes directement applicables à la fixation de la fumure :

1° Il y a *interdépendance* étroite des trois éléments N. P. K. en ce qui concerne leur action fertilisante. C'est ainsi que l'utilisation plus large des engrais azotés a rendu nécessaire un apport parallèle de quantités de potasse accrues. La solidarité des trois éléments se manifeste également dans le fait maintes fois constaté qu'une fumure incomplète peut se montrer inefficace et même dépressive dans le cas où elle vient accentuer un déséquilibre nutritif préexistant dans le milieu. En voici un exemple, que j'emprunte au rapport de 1937 et qui est relatif à un sol de limon n'ayant pas reçu d'engrais potassiques depuis cinq ans :

Expériences sur orge (H. Burgevin, Versailles 1937)

	Témoin sans engrais	P + K	K + N	N + P	N + P + K
Qx par ha	12,0	21,4	17,4	9,5	31,9

On voit que l'engrais binaire N+P a été appliqué en pure perte.

L'expérience montre que dans la très grande majorité des cas c'est l'engrais complet qui correspond à l'optimum économique. On peut donc s'étonner que les engrais composés ne soient pas plus largement utilisés

en France alors que de tous temps ils ont été à peu près les seuls employés dans certains pays comme les Etats-Unis. Il y a soixante-ans on a pu dire aux agriculteurs que l'achat des engrais simples ou leur mélange direct à la ferme constituait une garantie. Cet argument a perdu aujourd'hui toute valeur ; par contre, on pourrait faire valoir en faveur des engrais composés la *généralité* et la *commodité* de leur emploi.

2° L'*azote* est un élément dont l'apport présente une utilité à peu près générale ; c'est lui qui détermine le rendement maximum accessible ; c'est aussi celui des trois éléments dont le coefficient d'efficacité se montre le plus élevé. Il est donc logique d'en faire le *pivot* de la fumure et de fixer la limite à laquelle cet élément peut être avantageusement porté dans chaque cas. Il reste alors à fixer les quantités de P. et K qui devront accompagner cet azote dans la fumure pour assurer l'équilibre alimentaire du milieu. A cet effet on peut s'appuyer utilement sur l'analyse du sol ou plus exactement sur la détermination de ses éléments sous forme «assimilable». La comparaison de ces tests chimiques et des observations culturales a conduit à établir des corrélations sur lesquelles repose l'interprétation des résultats analytiques ; entre les mains d'un agronome averti ces indications permettent aujourd'hui de trancher avec sécurité la question de savoir si le besoin d'un sol en acide phosphorique et en potasse est intense, modéré ou nul. Il serait souhaitable que la propagande fît un plus large usage de ces déterminations rapides et peu coûteuses.

En définitive et par analogie avec ce qui s'observe en matière d'alimentation, nous voyons que la fumure peut être définie par deux caractéristiques : l'une expri-

mant la quantité d'azote apportée, l'autre indiquant les rapports entre eux des trois éléments N : P^2O^5 : K^2O (formule de fumure).

3° Si théoriquement on peut concevoir autant de formules de fumure que de cas particuliers, il ne faut pas en pratique conférer à une telle formule un caractère de précision mathématique qu'elle ne comporte pas. Il existe en effet des zones optima avec possibilité de variations assez larges sans répercussion appréciable sur les rendements ; la formule de fumure s'accommode donc d'une certaine souplesse. D'autre part, en ce qui concerne les limites extrêmes, les faits nous montrent que dans la plupart des cas pour N = 1 P^2O^5 et K^2O varient de 1 à 3. Dans la région de culture industrielle, le rapport des éléments fertilisants consommés est sensiblement 1-1,8-2,0. On arrive donc à cette conclusion que les engrais composés destinés aux fumures d'entretien pourraient être réduits à un petit nombre de types ainsi que l'a déjà indiqué ici même M. Roux (1). Comme base, il paraît souhaitable de se rapprocher de la formule 1-1-2 qui convient aux plantes sarclées. Un second type serait enrichi en P^2O^5 1-2-2 ; un troisième 1-1-3 le serait en K^2O. On pourrait en outre adjoindre un mélange phosphopotassique.

Nous ajouterons que si de tels produits nous paraissent pouvoir être utilement mis au service de l'agriculture, les engrais simples n'en demeurent pas moins indispensables pour opérer les redressements com-

(1) *C. R. Ac. Agric.*, 3 mai 1933, p. 526.

mandés par les circonstances, qu'il s'agisse de fumure de fond ou d'applications en couverture.

Telle est dans son essence la doctrine actuelle des Stations agronomiques. Le problème de la fumure ne se présente plus comme une série de dilemmes : sulfate d'ammoniaque ou nitrate de soude, superphosphate ou scories de déphosphoration ; il est devenu essentiellement un problème d'*alimentation*.

D'autre part, vous trouverez dans le Rapport de 1937 de nombreux documents concernant le rôle du soufre, de la magnésie, du bore, etc... Je me bornerai à indiquer que jusqu'ici notre agriculture semble s'être trouvée relativement préservée des maladies dites de carence, plus fréquentes dans d'autres pays. Mais l'attention des chercheurs est en éveil afin de les dépister dès l'apparition des symptômes avertisseurs, comme cela s'est produit dans la maladie du cœur de la betterave, que l'application du bore a permis de combattre avec un plein succès.

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LE CENTRE NATIONAL

DE

RECHERCHES AGRONOMIQUES

DE VERSAILLES

1934

MINISTÈRE DE L'AGRICULTURE

INSTITUT DES RECHERCHES AGRONOMIQUES

LE CENTRE NATIONAL DE RECHERCHES AGRONOMIQUES DE VERSAILLES

Le Conseil d'Administration de l'Institut des Recherches Agronomiques, dès 1921, a pris la décision de grouper progressivement, en réduisant leur nombre, les Stations et Laboratoires, pour n'avoir plus en France qu'un petit nombre de Stations régionales bien outillées, formant dans chacune des principales régions un Centre de Recherches Agronomiques. En dehors de ces Centres, seules quelques Stations spécialisées seront maintenues.

C'est en s'inspirant de ce principe qu'ont été créés les Centres régionaux de Provence à Antibes, du Sud-Ouest à Bordeaux, du Massif Central à Clermont-Ferrand, d'Alsace à Colmar, et le Centre national à Versailles, dont la première Station a commencé à fonctionner en 1928.

Ce dernier dispose d'un ensemble de 44 hectares de terre ayant fait partie des anciennes fermes de la Ménagerie qui, depuis Louis XIV, appartiennent au Grand Parc de Versailles.

Tous les moyens de travail nécessaires aux chercheurs ont été réunis : laboratoires bien outillés et champs d'expériences. L'emplacement choisi leur donne l'ambiance et le calme favorables et leur permet de rester en liaison avec les organismes chargés de la vulgarisation des résultats obtenus et les Etablissements de recherches de l'Université. La grande culture des plateaux de Seine-et-Oise est toute proche. A Roquencourt se trouvent les Arboretum et Fruticetum du Muséum d'Histoire Naturelle. A Versailles même se trouve l'Ecole Nationale d'Horticulture. La ferme de l'Institut Pasteur à Villepreux, la ferme de l'Institut Agronomique à Noisy-le-Roi et l'Ecole de Grignon sont dans le voisinage.

La grande facilité des communications avec Paris permet aux travailleurs du Centre l'accès des ressources intellectuelles des laboratoires et bibliothèques de l'Université de Paris.

En parcourant ce Centre, actuellement en

voie d'achèvement, on pourra constater que tout luxe a été soigneusement écarté. Il se présente dans des conditions modestes en comparaison d'organisations similaires édifiées dans nombre de pays étrangers.

Tous les terrains du Centre sont des champs d'expérience et non des cultures modèles de démonstration. De nombreux essais comportent souvent des opérations culturales effectuées à des époques qui peuvent étonner le praticien. De même, l'essai de produits nouveaux, dont on veut apprécier soit l'efficacité contre les parasites, soit la toxicité pour les végétaux, donne à ces cultures une apparence hétérogène inhérente au caractère même de ces recherches.

Le Centre groupe les Stations centrales suivantes :

Agronomie : Sols et Biochimie végétale.

Amélioration des plantes de grande culture.

Zoologie agricole.

Pathologie végétale.

Physique et Climatologie agricoles.

Services annexes :

Laboratoire de Phytopharmacie.

Laboratoire des Blés et Farines.

Documentation.

Dessin.

Administration.

Aux termes des décrets du 25 octobre et du 5 novembre 1923, les Stations centrales sont chargées, chacune en ce qui la concerne, de procéder, avec l'aide des Stations régionales, à toutes recherches et expériences susceptibles de conduire à la découverte de méthodes, de procédés ou de produits permettant d'améliorer la production agricole.

Fig. 1. — Station Centrale d'Agronomie : Serre et abri grillagé.

Fig. 2. — Station Centrale d'Agronomie : Abri grillagé et blocs à alvéoles pour vases de végétation.

STATION CENTRALE D'AGRONOMIE

(Sols et Biochimie végétale)

Cette Station est entrée en activité à la fin de 1927.

Les expériences établies en vue de dégager les bases scientifiques de la fumure, d'après les résultats d'une série d'années, ont porté sur l'influence de la nature des engrais, de leur mode d'application, des doses employées, des effets résiduels. Elles ont abouti, pour les engrais azotés, à préciser, pour les céréales et dans les sols types de la région, la dose d'azote la plus avantageuse et la forme la plus appropriée. Les essais se poursuivent en ce qui concerne les plantes sarclées. Les essais en vases de végétation (1) ont montré que dans le sol naturel la fixation de l'azote sur les bactéries des nodosités des légumineuses n'est pas influencée, contrairement à une opinion assez courante, par l'apport d'engrais azotés. Des essais en plein champ ont confirmé l'utilité de faibles doses d'engrais azotés pour les légumineuses.

L'étude de l'évolution des phosphates solubles et du besoin des sols en acide phosphorique (2) a abouti à une nouvelle méthode d'appréciation, par l'analyse, des besoins des sols en acide phosphorique. Elle a montré, en outre, qu'en ce qui concerne leur comportement dans les sols minéraux, aucun avantage d'ordre général n'a pu être réalisé en faveur des phosphates alcalins solubles.

Une étude parallèle a été poursuivie pour l'appréciation des besoins des sols en engrais potassiques (3) et en amendements calcaires (4).

L'action des engrais phosphatés sur le développement de la plante et la formation de certains constituants essentiels a été précisée dans le cas de l'orge de printemps (5).

En culture maraîchère, il est de tradition dans certaines régions, en particulier dans celle de Croissy, d'employer des doses considérables de fumier. Les essais en cours depuis 1928 ont montré qu'il était possible de substituer, au moins partiellement, à cette fumure organique de plus en plus difficile à obtenir, une fumure purement minérale sans diminuer le rendement. Ces essais forment la base d'une nouvelle pratique qui se répand dans la région de Croissy (6).

L'influence des matières humiques sur l'action des engrais minéraux et la capacité de production des sols ont retenu particulièrement l'attention. L'obtention de fumier artificiel a été étudiée tant au point de vue du mode de préparation que des phénomènes chimiques et biologiques (7) qui se produisent au cours de la fermentation (fig. 4).

Une instruction pratique pour la fabrication du fumier artificiel a été publiée (8) et des essais se poursuivent en ce qui concerne son utilisation au point de vue thermique, en horti-

(1) H. Burgevin. — C. R. 106, p. 441 et *Acad. Agr. de France*, 19 (1933), p. 186.

(2) A. Demolon et G. Barbier. — *Ann. Science Agr.* (1930), p. 329.

(3) G. Barbier. — *Ann. Agr.* (1932), p. 628. — *Ibid.* (1933), p. 651.

(4) R. Chaminade. — *Ann. Agr.* (1933), p. 453.

(5) H. Burgevin et G. Guyon. — *Ann. Agr.* (1933), p. 663.

(6) G. Pichard. — *Journ. Agr. Prati.*, 97 (1933), p. 324.

(7) A. Dunez. — *Ann. Agron.* (1933), p. 505.

(8) Demolon & Burgevin. — *Journ. Agr. Pratique*, 96e année, 1932, p. 192.

culture (9) et à la production du champignon de couche. Une méthode d'analyse a été élaborée (10), afin de suivre l'évolution des constituants de la paille au cours de la fermentation du fumier et de l'humification dans le sol. Des études ont été poursuivies, en outre, sur le rôle de l'humus dans les propriétés absorbantes du sol et dans sa structure (11).

Pour les essais en vases de végétation, la Station dispose de 100 vases en verre avec l'appareillage accessoire, pour cultures en milieu liquide, de 300 vases en tôle galvanisée (fig. 1, à gauche) et de 100 vases en grès d'un modèle spécial (fig. 1, à droite) pour cultures avec terre végétale. Ces vases sont, pour une partie, sous abri grillagé et sur chariots permettant la rentrée dans la serre en cas d'intempéries. Une autre partie est logée dans des alvéoles ménagés dans des blocs de ciment (fig. 2), également sous abri grillagé. Il existe, en outre, 15 cases lysimétriques (fig. 3 au premier plan) sous un autre abri grillagé, qui protège en même temps 50 cylindres de végétation en grès (fig. 3, en haut et à droite).

Travaux en cours. — Les recherches en cours sont le développement de celles qui viennent d'être exposées. Elles portent en particulier sur les relations entre la fumure et la composition des récoltes, l'arrière-action des engrais, l'évolution des éléments fertilisants dans le sol, les mouvements de substances dont les sols sont le siège, l'évaluation du besoin en chaux des sols, enfin la fixation symbiotique de l'azote et le rôle de certaines bactéries dans la fermentation chaude du fumier.

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(9) Marcel, Geslin & Hénin. — *Ann. Agr.*, 2 (1932), p. 670.

(10) Pichard. — *Ann. Agr.* (1931), n° 4, p. 505.

(11) Demolon & Hénin. — C. R. de l'Assoc. Int. de la Sc. du Sol, vol. 3 (1932).

Fig. 3. — Station Centrale d'Agronomie : Cases lysimétriques.

Fig. 4. — Station Centrale d'Agronomie : Fumière expérimentale.

STATION CENTRALE D'AMÉLIORATION DES PLANTES DE GRANDE CULTURE

Cette Station est entrée en activité à la fin de 1929. Elle s'est attachée à réunir des collections aussi complètes que possible des variétés de blé, avoine, orge et pommes de terre. Elle en poursuit l'étude, tant du point de vue de leur description (1) que de leur comportement en fonction des diverses conditions de milieu (2, 3, 4, 5). Un catalogue synonymique des variétés de blé a été établi en 1932.

Les travaux de M. le Professeur SCHRIBAUX tendant à créer des variétés perfectionnées de blé et d'avoine sont poursuivis. Ils ont abouti à l'obtention de deux variétés d'avoine (*Avoine de Versailles* et *Noire précoce de Noisy*) qui ont été confiées à la culture en 1933.

De nombreux hybrides de pommes de terre obtenus par M. le Professeur DUCOMET, en vue d'obtenir des variétés de bonne qualité culinaire, résistantes à la maladie verruqueuse et au mildiou, sont étudiés et multipliés.

Des essais sont effectués pour l'obtention de céréales résistant au froid (6).

La Station est chargée, par le Comité de contrôle des Semences, de l'examen botanique et du comportement des nouvelles variétés de blé proposées à l'inscription au Registre des Plantes sélectionnées, et elle assure le Service officiel de l'Identité-Pureté des semences.

Les travaux et expériences de cette Station sont effectués sur des terres avoisinant les laboratoires (Etoile de Choisy) et, d'autre part, sur une pièce de 20 hectares dite les « Grands Closeaux » (fig. 14).

Un jardin botanique en voie d'organisation comprend déjà 700 espèces et sous-espèces de plantes de grande culture avec leurs ancêtres sauvages.

(1) L. ALABOUVETTE. — *J. Agr. Prat.*, janvier 1933.
(2) L. FRIEDBERG. — *Le Sélectionneur* II, mars 1933.
(3) R. FRIEDBERG-BRETIGNIÈRES. — *Ann. Agronom.* II (1932), pp. 215-228.
(4) V. DUCOMET. — *Le Sélectionneur français* I, 1932.
(5) L. FRIEDBERG. — *Ann. Agronom.* III (1933), pp. 697-737.
(6) R. DIEHL. — *Le Sélectionneur* II, mars 1933.

STATION CENTRALE DE ZOOLOGIE AGRICOLE

Créée à Paris en 1894 par le Professeur P. MARCHAL, Membre de l'Institut, cette Station a été transférée à Versailles en 1928.

Depuis son origine, on y a poursuivi des recherches sur la plupart des parasites des plantes cultivées de la France et de l'Afrique du Nord, en particulier sur les Cecidomyies des céréales, les Cochenilles nuisibles aux arbres fruitiers et forestiers, les Microlépidoptères de la vigne (*Eudémis, Cochylis, Pyrale*), les Pucerons, les Larves souterraines, la Teigne et le Doryphora de la pomme de terre, les Sauterelles dans le Midi de la France et le Nord africain.

Contre ces parasites, on a pu établir des moyens de lutte efficaces :

a) Par l'emploi de leurs ennemis naturels : destruction de la Cochenille australienne (*Icerya purchasi*) par une Coccinelle (*Novius cardinalis*), du Puceron lanigère du pommier par un Hyménoptère (*Aphelinus mali*), etc...

b) Par la mise au point de méthodes physiques, chimiques, ou par des procédés culturaux : traitements contre les parasites par les divers composés arsenicaux, sulfocalciques, cyanhydriques, les produits à base de pyrèthre et les bouillies mixtes. Des travaux sur la désinfection des produits agricoles et horticoles ont servi de base à l'établissement des Stations de désinfection dans les grands ports de France et de nos colonies (1).

Parmi les questions examinées à cette Station depuis 1928, on peut citer :

— Biologie et lutte contre les Elatérides (*Taupins*) (2), les Pucerons, en particulier le Puceron lanigère du pommier (3) et les Pucerons migrateurs de l'orme. Des parasites naturels (*Doryphorophaga, Perillus*), importés des Etats-Unis, ont été expérimentés dans la lutte contre le Doryphora de la pomme de terre (4).

— L'étude des Muscidés des céréales (*Chlorops, Oscinies*) a permis d'en préciser l'évolution et le rôle parasitaire (5).

— Par des essais de désinfection dans un vide partiel avec divers gaz toxiques, on a pu mettre au point cette technique dans la désinfection d'un certain nombre de produits agricoles : en particulier, on a démontré l'innocuité pour la pomme de terre d'une dose de 300 gr. de sulfure de carbone par mètre cube, dose plus que suffisante pour la destruction du Doryphora.

La Station dispose, pour l'étude des insectes, de cages de types divers qui sont établies suivant les besoins, soit à l'intérieur de salles spécialement aménagées, soit dans des champs d'expériences. Une serre à compartiments distincts permet d'obtenir les conditions d'isolement nécessaires pour certains élevages.

Une grande installation expérimentale de désinfection sous un vide partiel réglable per-

(1) P. MARCHAL et P. VAYSSIÈRE. — *Ann. des Epiph.*, XI (1925).

(2) L. MESNIL. — *Rev. de Path. vég. et Ent. Agr.*, XVII (1933).

(3) P. MARCHAL. — *Ann. des Epiph.*, XIV (1928), pp. 1-106, et XV (1929), pp. 125-181.

(4) B. TROUVELOT. — *Ann. des Epiph.*, XVII (1931), pp. 408-445.

(5) L. MESNIL et F. PETRÉ. — *Bull. Soc. Ent.*, 102 (1932), pp. 217-222.

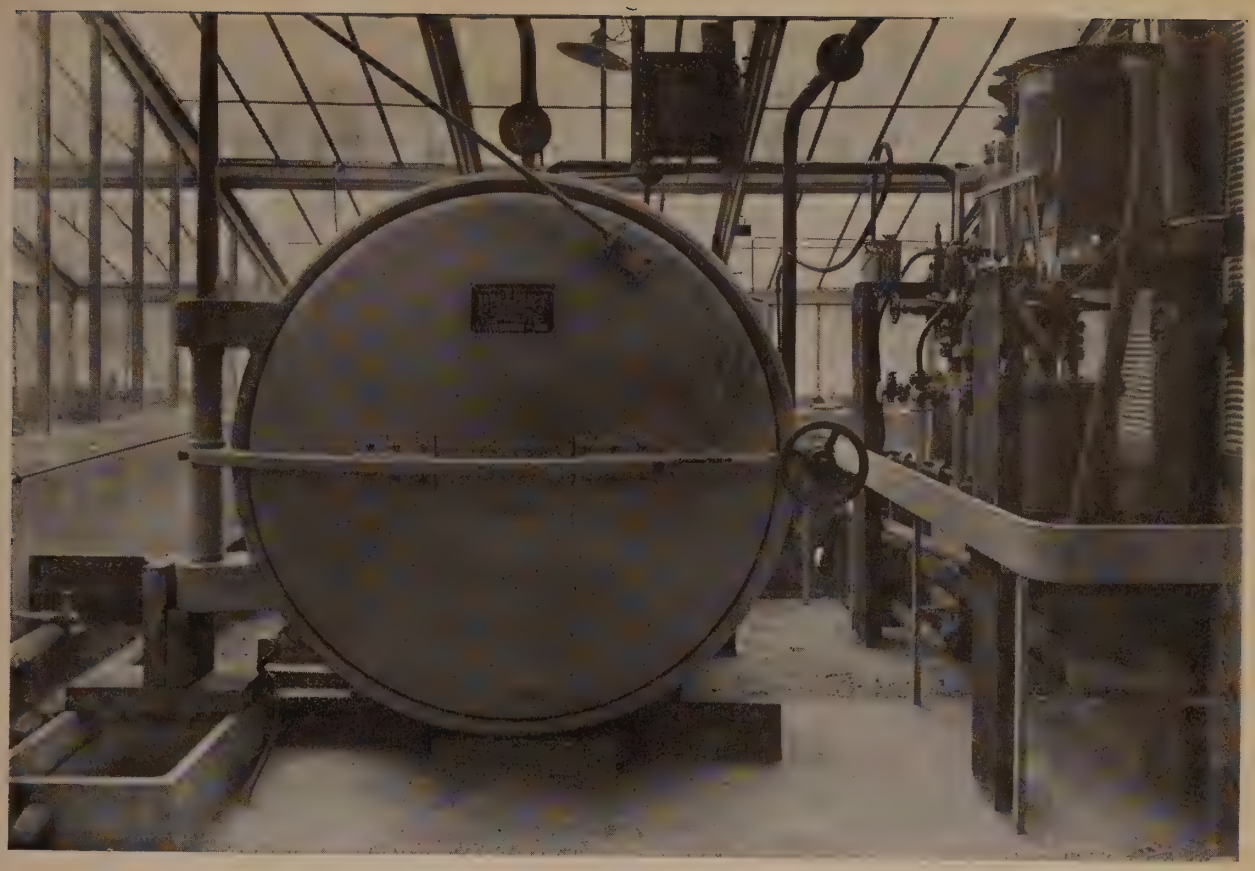

Fig. 5. — Station de Zoologie : Appareil pour la désinfection des végétaux et produits agricoles dans le vide.

Fig. 6. — Station Centrale de Pathologie Végétale : Bibliothèque.

met l'étude de l'action des substances toxiques sur les insectes (fig. 5).

Une salle de collections met sous les yeux du visiteur les principaux insectes parasites de chaque groupe de plantes cultivées. Des collections scientifiques permettent la détermination de ces insectes.

Questions à l'étude. — Les recherches en cours à cette Station portent essentiellement :

a) Sur la biologie de divers groupes de parasites : Aphidiens de l'orme et leurs migrations sur les céréales et arbres fruitiers; Diptères et insectes divers des céréales et leurs rapports avec la faune des graminées sauvages; Coccidés de France (6).

b) Sur les relations biochimiques entre certains insectes phytophages et leurs plantes nourricières.

c) Sur l'emploi de certains insecticides (huiles végétales et huiles minérales) dans les traitements d'hiver des arbres fruitiers.

Service des Vertébrés. — Les travaux de ce Service visent la protection des oiseaux insectivores et la destruction des oiseaux nuisibles (7), des rongeurs (8) et autres mammifères nuisibles aux cultures et aux habitations.

L'étude des migrations des freux et des hérons cendrés, par baguage, a permis de démontrer que de nombreux freux viennent en France de Russie. Des essais sur la toxicité du sulfate de strychnine sur les rongeurs, de son degré de nocivité pour les divers animaux domestiques, ont montré la nécessité de certaines précautions dans l'emploi de ce produit. Le rat musqué et le hamster, rongeurs encore peu répandus en France, y ont été étudiés.

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(6) A. Balachowsky. — *Encycl. Entom.*, XV (1932), pp. 1 à 284.

(7) Chappellier. — *Les Corbeaux de France*, Paris 1933.

(8) Chappellier. — *Les Rongeurs de France*, Paris 1933.

STATION CENTRALE DE PATHOLOGIE VÉGÉTALE

Créée à Paris en 1887 par le Professeur E. PRILLIEUX, membre de l'Institut, sous le nom de Laboratoire de Pathologie végétale, elle a été transférée à Versailles en 1927. La plupart des questions de pathologie végétale intéressant l'agriculture française ont fait l'objet de recherches dans cette Station. On doit citer: Mildiou, Black-rot de la vigne; Rouilles, Piétin des céréales; Mildiou, Maladies bactériennes, Maladies de dégénérescence, Maladie verruqueuse de la pomme de terre, Cercospora, Maladie du cœur de la betterave; Feu sauvage, Mosaïques du tabac; Tavelures et Chancres des arbres à pépins, Coryneum, Monilia, Cloque des arbres à noyaux, Pourridiés, Maladie de l'encre du châtaignier, etc...

La Station de Pathologie végétale dispose d'une importante bibliothèque (fig. 6), due en grande partie à un legs du Professeur PRILLIEUX, et de collections comprenant des échantillons des principales maladies des plantes cultivées et un herbier mycologique (fig. 7).

A côté des laboratoires existent des salles contenant des étuves à différentes températures et une chambre-étuve (fig. 8), destinées à contenir les cultures pures de champignons et de bactéries parasites étudiés.

Dans une serre à compartiments isolés peuvent s'effectuer des expériences simultanées avec des parasites différents.

Des champs d'expériences et un verger (fig. 9) permettent les observations biologiques et les essais pratiques de traitement.

Depuis 1927, quelques questions ont été particulièrement étudiées :

a) *Céréales.* — Les essais poursuivis depuis 1929 contre la carie du blé ont permis la mise au point de traitements à conseiller : traitements liquides (solution de sulfate de cuivre, puis chaux en poudre; formol; bouillie bordelaise caséinée après lavage) ou traitements pulvérulents (chlorure cuivreux, oxychlorure de cuivre). (1).

Dans le Piétin du blé, deux principaux types de piétin ont été mis en évidence, différant par leurs conditions de développement, symptômes et effets sur la plante. Tandis que l'un envahit dès l'automne les blés semés en octobre ou en novembre et détermine la destruction de la plante, la verse ou l'échaudage, l'autre n'évolue que plus tard et aboutit presque toujours à l'échaudage. L'acide sulfurique, vu la variabilité de ses effets, ne peut être conseillé et a été abandonné depuis 1932 (2).

b) *Plantes industrielles.* — Des cultures poursuivies en Alsace ont permis de reconnaître un certain nombre de variétés de pommes de terre douées d'immunité pour la maladie verruqueuse et dont l'emploi permettrait d'éviter ses dégâts au cas où elle s'étendrait en France (3).

c) *Arbres forestiers.* — L'adaptation des châtaigniers japonais aux conditions locales françaises montre qu'ils peuvent rendre d'incontestables services pour remplacer les variétés indigènes détruites par la maladie de l'Encre.

(1) G. ARNAUD & M. GAUDINEAU. — *Ann. Sc. Agr.*, nov.-déc. 1929 et févr. 1930. — *Ann. Agr.*, janv.-févr. 1931 et mars-avril 1932.

M. GAUDINEAU. — *Ann. des Epiph.*, XVIII (1932), pp. 340-355.

(2) E. FOEX & E. ROSELLA. — *Ann. des Epiph.*, XVI (1930), pp. 51-83. — *Rev. de Path. vég. et Ent. agr.*, XX (1932), pp. 172-187.

(3) V. DUCOMET & E. FOEX. — *Le Bulletin agricole*, 52 (1932), pp. 32-36.

Fig. 7. — Station Centrale de Pathologie Végétale : Salle des Collections.

Fig. 8. — Station Centrale de Pathologie Végétale : Chambre-Etuve.

Fig. 9. — Station Centrale de Pathologie Végétale : Verger d'Expériences.

Fig. 10. — Station Centrale de Physique et de Climatologie: Observatoire météorologique

d) *Plantes maraîchères.* — L'étude de collections de variétés a permis de mettre en évidence onze variétés de pois chiches résistant à l'anthracnose due à *Ascochyta Rabiei*, une variété de haricot, le Nain abondant, résistant à la maladie de la Graisse et d'un type de laitue résistant au *Sclerotinia Libertiana* (4).

Une fumure équilibrée des laitues leur donne une résistance optimum au *Sclerotinia Libertiana*, carence ou pléthore de potasse accroissant leur susceptibilité.

e) *Arbres fruitiers.* — Des traitements contre la Tavelure du pommier et du poirier ont été mis au point pour la région parisienne et ont permis d'assurer la protection des variétés, même très sensibles comme le Doyenné d'hiver (5).

f) *Arbres d'alignement et plantes d'ornement.* — La nature parasitaire de la maladie des Ailantes, due au *Verticillium dahliæ*, a montré la nécessité de remplacer les Ailantes par d'autres essences (6).

Le chancre du *Cedrela sinensis* est dû à un champignon du genre *Fusicoccum* qui pénètre par les sections de branches (7).

Contre la maladie des Reines-Marguerites, due à un *Fusarium*, une désinfection des graines au formol a été préconisée.

Questions à l'étude. — Les recherches en cours sont en grande partie le développement de celles qui viennent d'être résumées. Elles portent surtout :

a) Sur la biologie de divers parasites (carie, rouilles, piétin des céréales, maladies à virus et maladies bactériennes du tabac et des cultures maraîchères, dépérissement du fraisier, mildiou de la vigne et tavelures des arbres fruitiers, etc.) et la résistance des espèces et variétés sur lesquelles ils se développent;

b) Sur l'influence des conditions culturales dans la lutte contre le piétin des céréales;

c) Sur des essais d'anticryptogamiques nouveaux contre le mildiou de la vigne, les tavelures et diverses maladies des cultures maraîchères.

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(4) F. Labrousse. — *Rev. de Path. végét. et Ent. agric.*, XVII, pp. 174 et 222.

(5) G. Arnaud. — *Ann. des Epiph.*, XVIII (1932), pp. 357-368.

(6) G. Arnaud & J. Barthelet. — *Ann. des Epiph.*, XVII (1931), pp. 249-323.

(7) G. Arnaud & J. Barthelet. — *Rev. de Path. Vég. et Ent. Agric.* (1933).

STATION CENTRALE
DE PHYSIQUE ET DE CLIMATOLOGIE AGRICOLES

Cette Station est entrée en activité en 1929.

En vue de définir les lois de croissance des plantes cultivées en fonction des facteurs du climat, une technique a été établie et des recherches commencées sur le blé (1, 2, 3, 4). Elles permettront de préciser les exigences spécifiques de chaque plante ou variété donnée, suivant son stade de développement, et fourniront, en particulier, aux gnétistes, une documentation précieuse en vue de la création de variétés mieux adaptées aux conditions du milieu.

Au point de vue pratique, la nouvelle méthode de culture sèche, par couverture du sol avec des papiers à base d'asphalte, a été expérimentée sur pommes de terre et sur diverses cultures maraîchères. Cette pratique n'apparaît pas dans nos régions comme étant économique, l'augmentation de rendements constatée ne couvrant pas les frais d'achat et de pose des papiers. Ce procédé ne peut être intéressant que dans des jardins potagers où il supprime binages et sarclages (5).

Des expériences ont été commencées sur l'utilisation du fumier artificiel du point de vue thermique (6), notamment en horticulture (fig. 12).

De même, une méthode est à l'étude pour la détermination pratique de la résistance au froid des plantes cultivées, notamment du blé.

Une méthode simple de prévision des gelées a, en outre, été mise au point (7).

En collaboration avec les Stations centrales d'Amélioration des plantes et de Pathologie végétale, une étude d'ensemble sur le développement des rouilles des céréales est poursuivie depuis 1930 (8).

La Station dispose d'une installation météorologique complète (fig. 10), qui lui permet notamment de fournir aux différents Laboratoires du Centre les divers relevés dont ils ont besoin pour le contrôle de leurs expériences et essais en cours.

Service annexe. — Installation frigorifique (fig. 11) : cette installation, mise à la disposition des différents Laboratoires du Centre, comporte une série de chambres froides, permettant l'étude de l'action du froid à toutes températures jusqu'à 25° au-dessous de zéro.

(1) H. Geslin. — Les gelées de l'hiver 1928-1929 au Centre de Recherches agronomiques de Versailles. Leur action sur les cultures. *Annales de la Science agronomique*, juillet-août 1929.

(2) H. Geslin. — Sur une relation existant entre les trois facteurs climatiques : eau, chaleur, lumière et le rendement des blés. Comptes rendus de l'Académie d'Agriculture, 1930, n° 14.

(3) H. Geslin. — Etude climatologique du développement d'un blé d'hiver (Lois de croissance en fonction de la température ; influence de l'éclairement.) *Annales agronomiques*, 1931, n° 5.

(4) H. Geslin. — Loi de croissance du blé en fonction des facteurs du climat. C. R. Ac. des Sciences, 16 oct. 1933, et C. R. Ac. d'Agriculture, 25 oct. 1933.

(5) J. Servy. — La culture sous papier. *Journal Agriculture pratique*, n° 20, 20 mai 1933.

(6) M. Marcel, H. Geslin & H. Hénin. — Utilisation du fumier artificiel au point de vue thermique en horticulture. *Annales agronomiques*, 1932, n° 5.

(7) H. Geslin. — Les gelées et leur prévision. Rapport sur le fonctionnement de l'Institut des Recherches Agronomiques en 1929, p. 31.

(8) H. Mattras. — Observations sur les rouilles du blé à Versailles, en 1930-1931 et 1931-1932. *Annales des Epiphyties*, 1932, 6e fascicule.

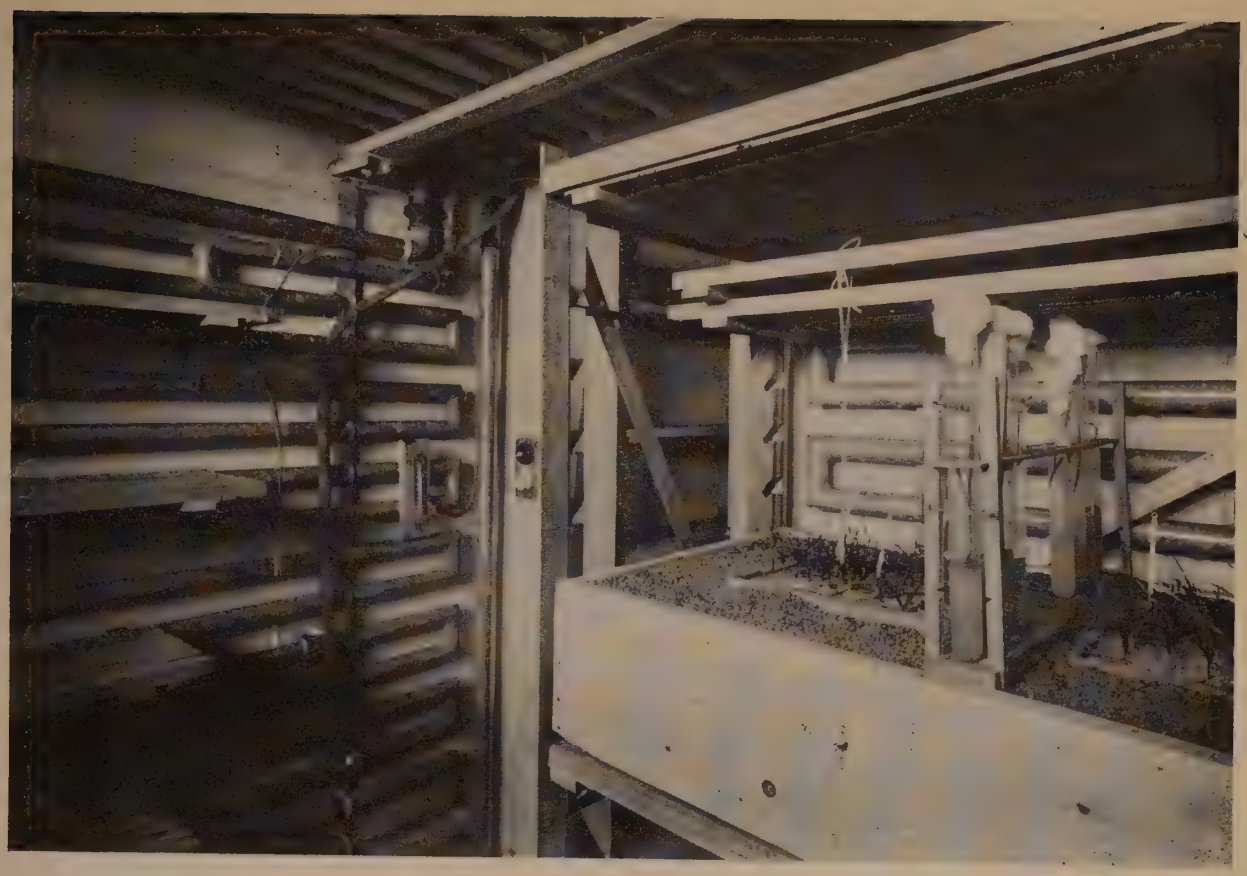


Fig. 11. — Station Centrale de Physique et de Climatologie : Installation frigorifique.

Fig. 12. — Station Centrale de Physique et de Climatologie : Cultures sur couches à fumier artificiel.

LABORATOIRE DE PHYTOPHARMACIE

Ce Laboratoire, qui dépend de la Station centrale d'Agronomie, apporte son concours aux Stations de zoologie agricole et de pathologie végétale pour l'étude chimique ou physique des insecticides et anticryptogamiques (1).

Les Stations et Laboratoires se chargent, à titre onéreux, de travaux d'expérimentation chimique et biologique pour le compte de particuliers dans les conditions suivantes :

Tout inventeur ou fabricant qui désire faire expérimenter un produit par une Station ou un Laboratoire de l'Institut des Recherches Agronomiques doit, au préalable, en faire connaître la *composition exacte*, qualitative et quantitative, et autoriser l'administration à publier, si elle le juge à propos, avec les résultats obtenus dans les essais, la formule du produit essayé.

S'il en était autrement, l'administration, par la publication d'expériences ayant donné des résultats favorables, se trouverait préconiser l'emploi d'un produit, sans avoir la garantie que la composition de la préparation mise dans le commerce, sous la même dénomination, est bien celle des échantillons qui ont servi aux expériences.

D'autre part, même si cette garantie lui était donnée, l'administration, en recommandant une spécialité, pourrait être soupçonnée de servir plutôt les intérêts particuliers des vendeurs que l'intérêt général.

(1) M. Raucourt. — Revue de phytopharmacie. *Ann. Agron.*, 3 (1933), p. 233-249.
M. Raucourt. — *Ann. des Fals. et des Fraudes*, 26 (1933), p. 274-280.
M. Raucourt et R. Dupoux. — *Rev. de Path. Vég. et d'Ent. Agr.*, 20 (1933), p. 160-170.

LABORATOIRE DES BLÉS ET FARINES

Créé en 1932, le Laboratoire des Blés et Farines a pour but de collaborer étroitement avec la Station centrale d'Amélioration des Plantes de grande culture, de façon à lui fournir les renseignements techniques sur la qualité des blés qu'elle obtient ou qu'elle utilise dans ses essais.

Les méthodes actuelles utilisées pour l'appréciation de la valeur boulangère des blés et des farines ne sont pas au point : il importe de les préciser, de les coordonner, de les simplifier si possible, tout en donnant une valeur plus grande aux indications qu'elles fournissent (1).

C'est là un travail de longue haleine qui ne pourra être mis au point que lorsque le Laboratoire possédera une documentation portant sur plusieurs récoltes et se rapportant à des types cultivés et récoltés dans des conditions parfaitement connues.

(1) G. Filaudeau. — C. R. Ac. Agric. de France, XIX (1933), pp. 700-704.
A. Feyte. — *Ann. Agron.* (1933), pp.
P. Potel. — *Ann. des Falsifications*, nov. 1933.

CENTRE NATIONAL DE RECHERCHES AGRONOMIQUES DE VERSAILLES

Inspecteurs généraux..... MM. REY et DEMOLON

Station centrale d'Agronomie :

Directeur ..... MM. H. BURGEVIN.
Directeur de Laboratoire..... G. PICHARD.
Chefs de travaux ..... G. GUYON, G. BARBIER, R. CHAMINADE, S. HÉNIN, M. BASTISSE, P. ANNE, G. DROUINEAU.
Préparateurs ..... A. DUNEZ, S. SCHONBERG.

Station centrale d'Amélioration des Plantes de grande culture :

Directeur ..... MM. L. ALABOUVETTE, chargé de la direction.
Chefs de travaux ..... R. DIEHL, P. JONARD, P. GANNEAU, A. TITARD, J. FLECKINGER.
Préparateurs ..... L. FRIEDBERG, R. FRIEDBERG (Mme), A.-M. POIRAULT (Mlle).

Station centrale de Zoologie agricole :

Directeur ..... MM. N...
Directeurs de Laboratoire ..... A. CHAPPELLIER, Service des Vertébrés; A. BALACHOWSKY, Entomologie.
Chefs de travaux ..... B. TROUVELOT, L. MESNIL.
Préparateur ..... A. MACARY.

Station centrale de Pathologie végétale :

Directeur ..... MM. E. FOEX.
Directeur de Laboratoire..... G. ARNAUD.
Chefs de travaux ..... J. BARTHELET, M. GAUDINEAU (Mlle).
Préparateur ..... A.-M. BARBIER (Mlle).

Station centrale de Physique agricole :

Directeur ..... MM. P. REY, Inspecteur général, chargé de la direction.
Chefs de travaux ..... H. GESLIN, chargé de la direction du Laboratoire de climatologie; M. GODARD.
Préparateur ..... J. SERVY.

Laboratoire de Phytopharmacie :

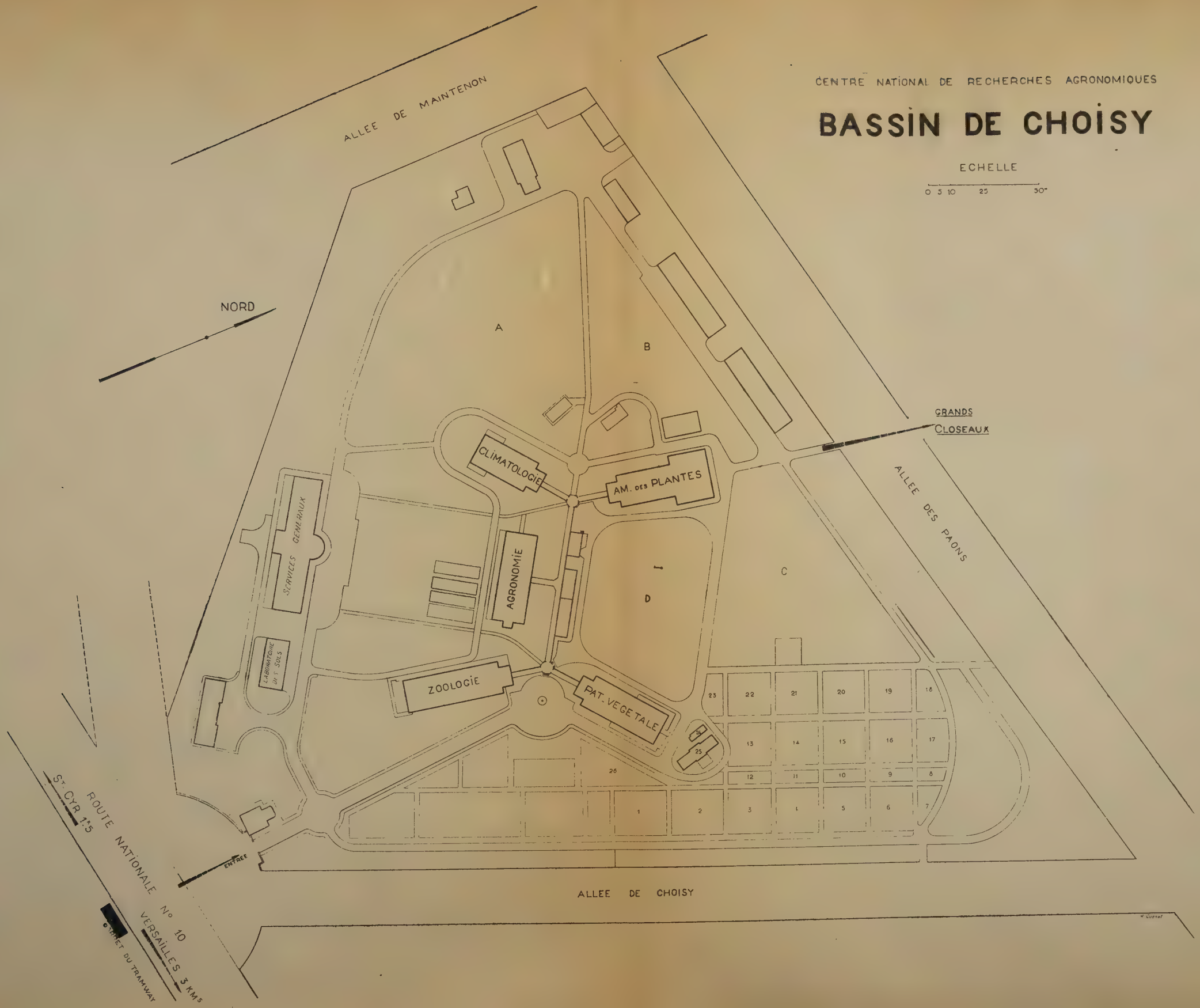
Chef de travaux..... M. M. RAUCOURT.

Laboratoire des Blés et Farines :

Directeur ..... MM. G. FILAUDEAU.
Préparateurs ..... A. FEYTE, P. POTEL.

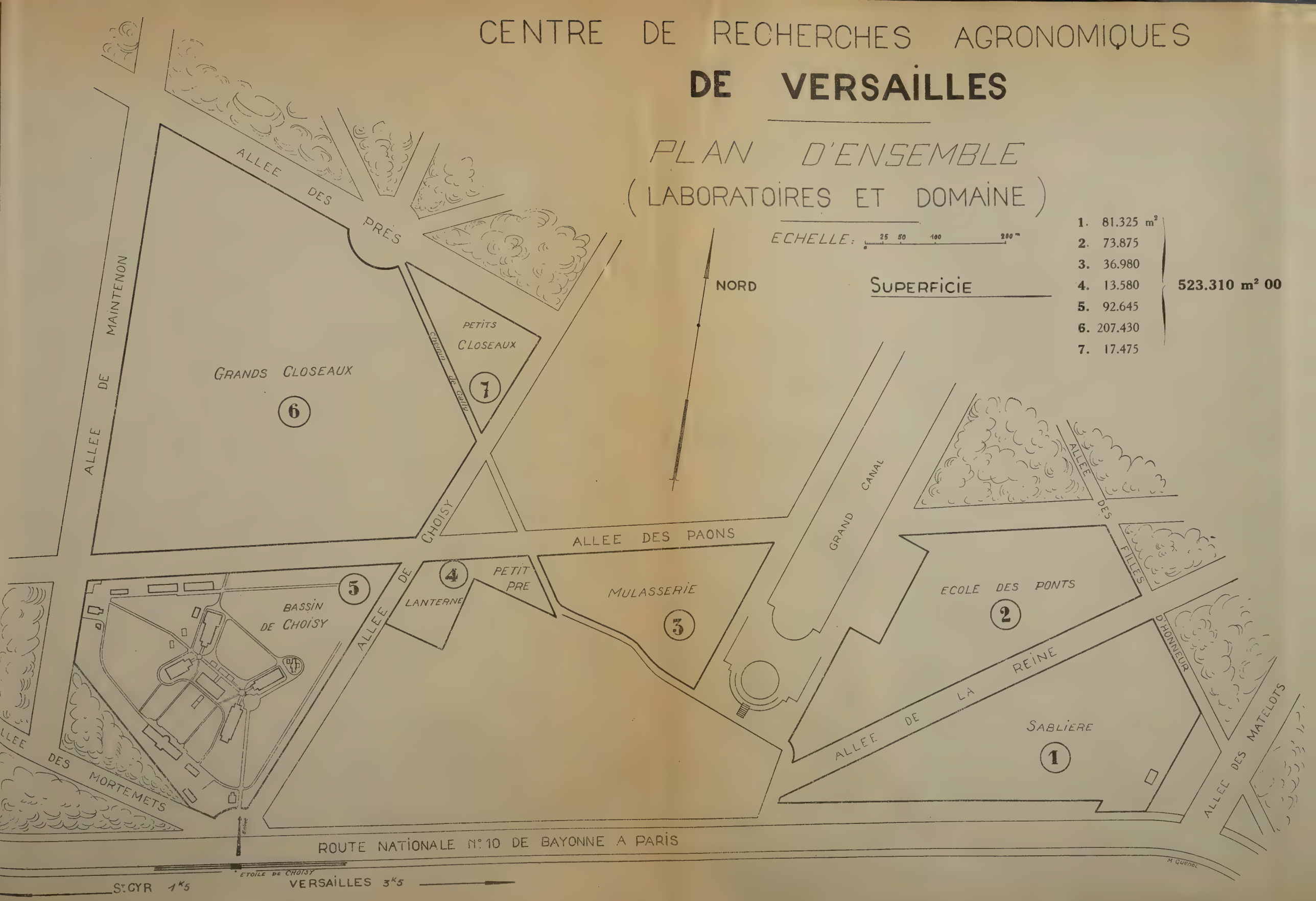
CENTRE NATIONAL DE RECHERCHES AGRONOMIQUES

BASSIN DE CHOISY



CENTRE DE RECHERCHES AGRONOMIQUES
DE VERSAILLES

PLAN D'ENSEMBLE
(LABORATOIRES ET DOMAINE)



Imp. WOLF
Rouen
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EXPOSITION INTERNATIONALE
PARIS 1937

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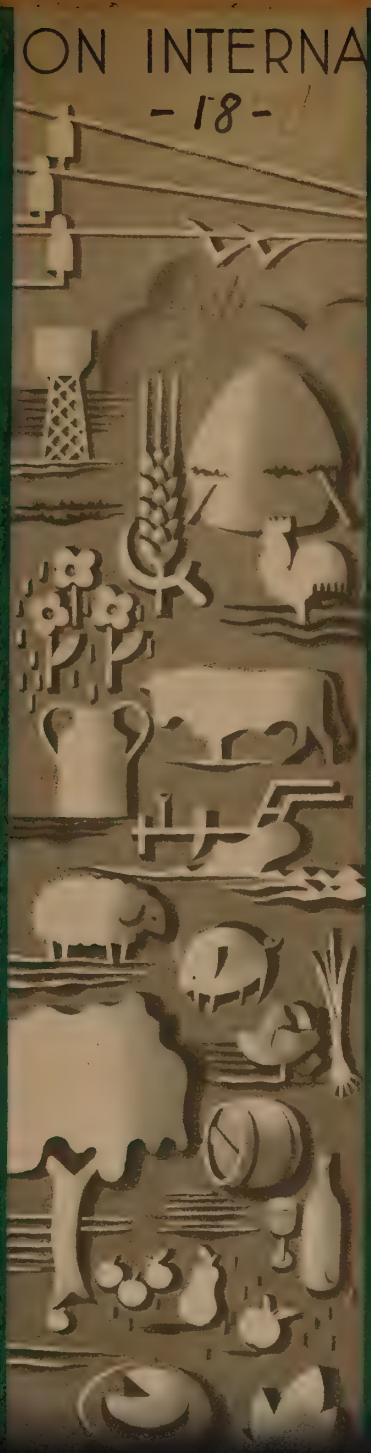
CENTRE RURAL



LA FRANCE AGRICOLE

LE COMITÉ DE L'AGRICULTURE
DE L'EXPOSITION DE PARIS 1937
PRÉSENTE
UNE MONOGRAPHIE
DE LA PRODUCTION AGRICOLE
DE LA
FRANCE

établie notamment d'après l'enquête décennale du Ministère de l'Agriculture publiée en 1937

●

SOMMAIRE

SITUATION GÉNÉRALE DE LA FRANCE

La France a une superficie de 550.896 kilomètres carrés, soit 1/18e de la surface totale de l'Europe.

Elle occupe dans l'hémisphère Nord une situation moyenne entre les latitudes de 42°, 21 et 51°5.

Elle a la forme générale d'un hexagone. Sa plus grande longueur est de 970 km. entre Dunkerque et Cerbère, sa plus grande largeur 940 km. de Strasbourg et la Pointe de Corsen (Bretagne.)

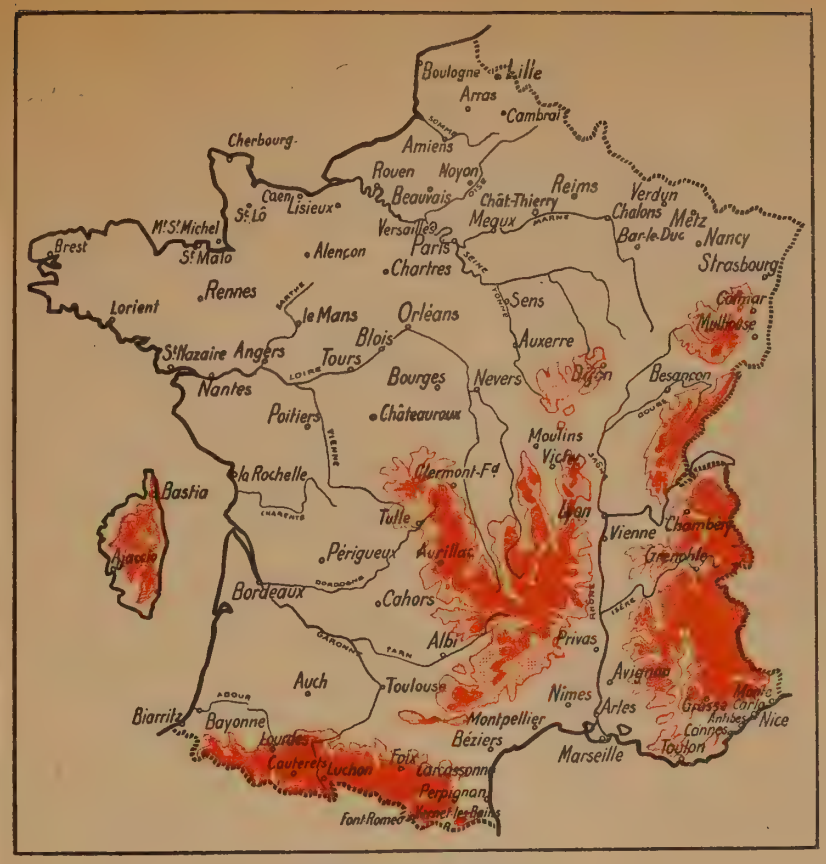
En raison de sa situation et de la longueur de ses côtes, la France jouit d'un climat modéré et maritime dans beaucoup de régions. Ses côtes atteignent 3.115 kilomètres, sans compter celles de la Corse, c'est-à-dire plus de 60 0/0 du périmètre total de ses frontières.

Ses différents massifs montagneux régularisent les précipitations atmosphériques et les vents dominants sont des vents doux de l'Ouest.

La hauteur moyenne des pluies est de 75 c/m par an. Leur répartition diffère assez sensiblement suivant les régions. Les pluies sont plus abondantes en Bretagne, sur le littoral de la Manche, dans les régions de l'Ouest et sur les montagnes que sur le littoral méditerranéen et dans l'Est.

La température moyenne est d'environ 12° pour l'ensemble de la France. La température moyenne d'hiver est de 6° et celle d'été de 18°.

On observe toutefois des différences assez marquées entre la température des régions du Nord, de l'Est, de l'Ouest, du Centre et du Midi, qui ont chacune des climats particuliers. La température moyenne de Nice, par exemple, est de 15°5 et celle de Paris 10°2.



Carte orographique

Carte départementale

Le sol de la France appartient à diverses formations géologiques et son relief est le résultat de phénomènes orogéniques successifs alternant avec l'action d'agents d'érosions.

La Bretagne, le Massif-Central, les Vosges, les Ardennes doivent leur origine au plissement hercynien. Le Massif-Central a été profondément remanié par les plissements alpins de l'ère tertiaire qui donnèrent naissance aux Pyrénées, au Jura et aux Alpes.

Les gneiss, les granits, les porphyres sont les principales roches constitutives des chaînes anciennes. Elles donnent des sols généralement imperméables, souvent pauvres. Se sont des régions de landes, de pâturages et de forêts.

Dans le cadre de ces massifs anciens, plus ou moins érodés, suivant leur âge et leur structure, s'étendent de larges bassins, communiquant entre eux par des seuils. Ces bassins s'orientent doucement vers la mer. Ils sont drainés par les grands fleuves français : la Seine, la Loire, la Garonne, le Rhône et leurs affluents. Ils sont de formation secondaire, tertiaire et quaternaire et offrent une grande variété de terrains de constitution et de fertilités bien différentes.

Les sols argilo-marneux, peu imperméables, se rencontrent en Champagne humide et en Auxois ; ils sont particulièrement propres aux pâturages.

Les roches calcaires sont très largement représentées en France. Toutes sont perméables, mais leur degré variable de compacité et leurs natures différentes déterminent des sols plus ou moins riches : pâturages à moutons dans les régions sèches et arides : Causses, Plateau de Langres, Champagne, Plateau Bourguignon. Enfin, les alluvions forment le fond des vallées et sont propres à toutes les cultures : aux cultures maraîchères et à l'arboriculture notamment. Les riches limons des plateaux de Picardie, de Beauce, de Brie, etc.... permettent le développement d'une culture intensive.

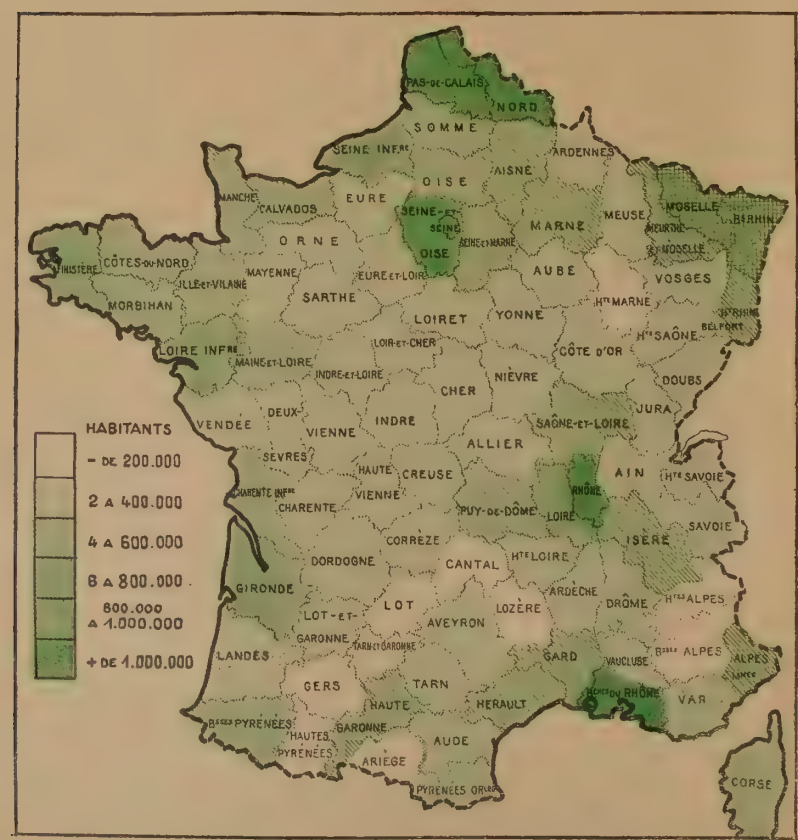
LA POPULATION

La population de France est de 42 millions d'habitants, soit 76 au kilomètre carré.

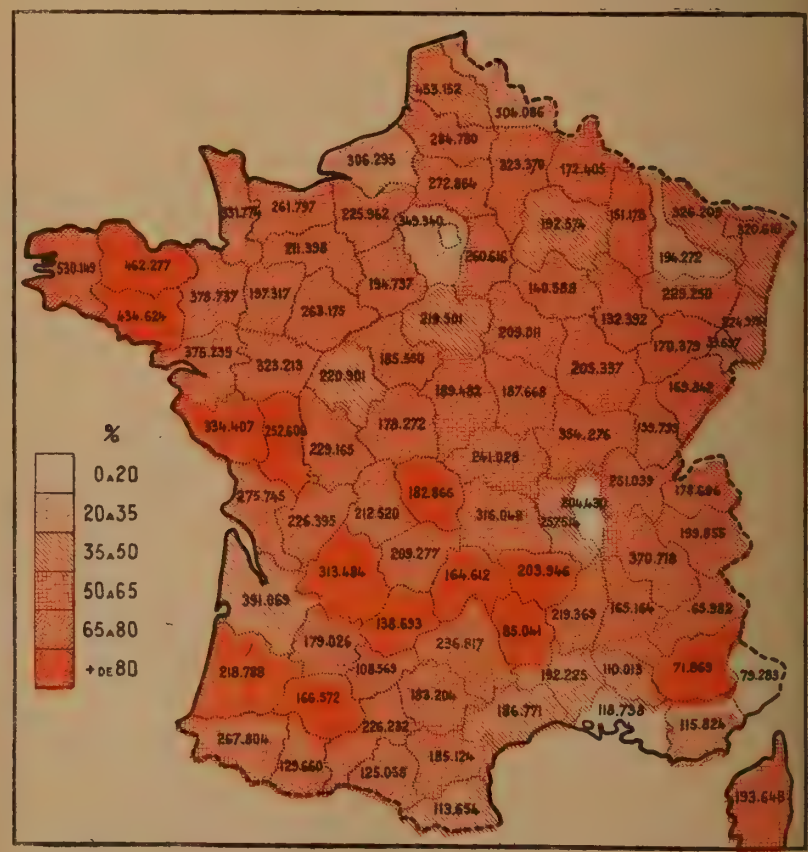
Sa répartition sur le territoire est très inégale. Il y a de grands écarts de densité entre les régions des centres industriels ou celles de culture intensive et les régions montagneuses, arides ou marécageuses. Depuis de nombreuses années, la population urbaine tend à s'accroître par rapport à la population rurale. La population urbaine était de 21 millions 421.000 habitants, soit 51,2 de la population totale en 1931. La population rurale, c'est-à-dire celle qui est recensée dans toutes les campagnes et les agglomérations de moins de 2.000 habitants était en 1931 de 20.414.000 habitants, soit 48,8 0/0.

Par sa population, la France se classe au quatrième rang en Europe, après l'Allemagne : 66 millions, l'Angleterre : 45 millions et l'Italie : 43 millions.

Les provinces françaises



Carte départementale de la population.



0/0 de la population rurale par rapport à la population urbaine et population rurale par département.

LA PRODUCTION AGRICOLE DE LA FRANCE PAR RAPPORT A CELLE DE L'EUROPE ET DU MONDE

La France est le quatrième pays producteur de **blé** du monde avec 88 millions de quintaux ; elle est précédée par les Etats-Unis : 180 à 220 millions de quintaux, le Canada : 80 à 120 millions de quintaux, les Indes Britanniques : 90 à 95 millions de quintaux.

Par contre, elle est le premier producteur d'Europe, précédant l'Italie : 61 millions de quintaux, l'Allemagne : 50 millions.

Sa production correspond à : 210 kgs de blé par habitant, chiffre supérieur à celui des autres pays. En effet, il ressort à 170 kgs en Italie, 160 kgs en Espagne et 75 kgs en Allemagne.

●

La France vient au troisième rang pour la production de la **pomme de terre,** avec le chiffre de 160 millions de quintaux. L'Allemagne et la Pologne représentent respectivement : 455 millions et 310 millions de quintaux.

La production nationale fournit 940 kgs par habitant en Pologne, 690 kgs en Allemagne, 610 kgs en Tchéco-Slovaquie, 380 kgs en France.

●

Pour la **betterave à sucre** la production française est de 75 millions de quintaux, ce qui lui vaut le deuxième rang dans l'Europe après l'Allemagne qui produit 95 millions de quintaux, immédiatement après la Tchéco-Slovaquie qui en produit 40 millions et l'Angleterre 30 millions de quintaux.

La production de sucre est de 25 kgs par habitant en France, tandis qu'elle est de 35 kgs en Tchéco-Slovaquie et 28 kgs en Belgique.

●

La production de **vin** atteint en France environ 60 millions d'hectolitres, soit 143 litres par habitant, ce qui lui assure le premier rang dans le monde et en Europe.

Sa production représente plus du tiers de la production mondiale.

L'Italie produit 36 millions d'hectolitres et l'Espagne 20 millions.

●

La France est un des pays d'Europe où les effectifs de **bétail** sont les plus élevés. Elle a 3.300.000 chevaux et baudets ; ce chiffre n'est dépassé en Europe que par la Pologne et l'Allemagne.

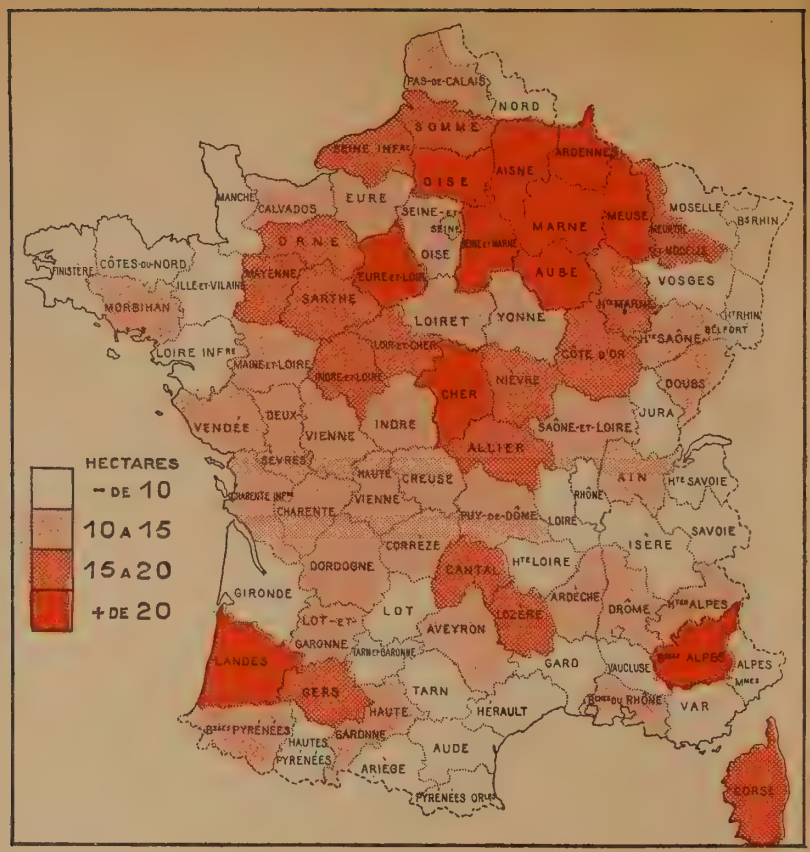
L'élevage bovin comprend 16.200.000 têtes, soit un peu moins que celui de l'Allemagne.

Le troupeau de moutons comprend 11 millions de têtes, l'Angleterre est le seul pays du continent européen qui en compte davantage.

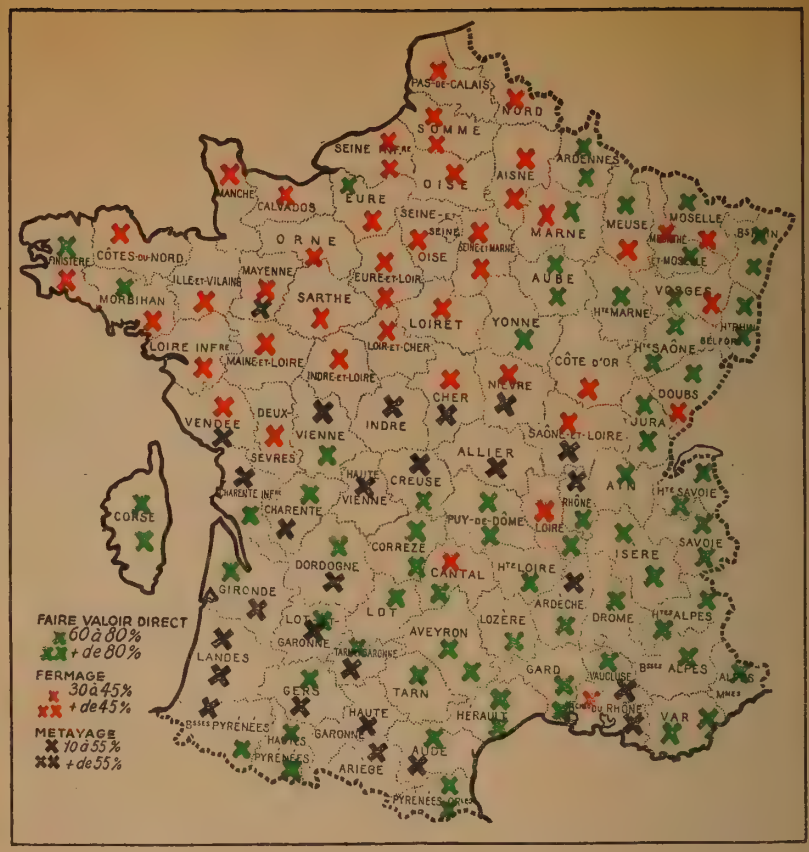
L'élevage porcin comprend 6 millions 600.000 têtes ; il est inférieur à celui de l'Allemagne, mais égal à celui de la Pologne.

●

La France est le troisième pays producteur de **lait** du monde entier, avec 140 millions d'hectolitres. Elle est précédée par les Etats-Unis : 500 millions d'hectolitres, l'Allemagne : 260 millions d'hectolitres ; toutefois si on considère la quantité de lait par habitant, elle occupe un rang inférieur car le Danemark atteint 1.650 litres, la Suisse 1.450 litres, en Hollande 600 litres, en Allemagne 400 litres, et en France 380 litres.



Surface moyenne des exploitations agricoles



Systèmes d'exploitation

En France :

60 % DU TERRITOIRE AGRICOLE SONT CULTIVÉS PAR LEURS PROPRIÉTAIRES,
30 % sont cultivés en fermages, et
10 % sont exploités en métayage.

C'est le régime de la petite et de la moyenne propriété rurale qui prédomine.

La moyenne de la propriété agricole est de 11 hectares 64.

Sur 4 millions d'exploitations, plus de 72 % ont moins de 10 hectares de superficie ; 3 % seulement dépassent 50 hectares.

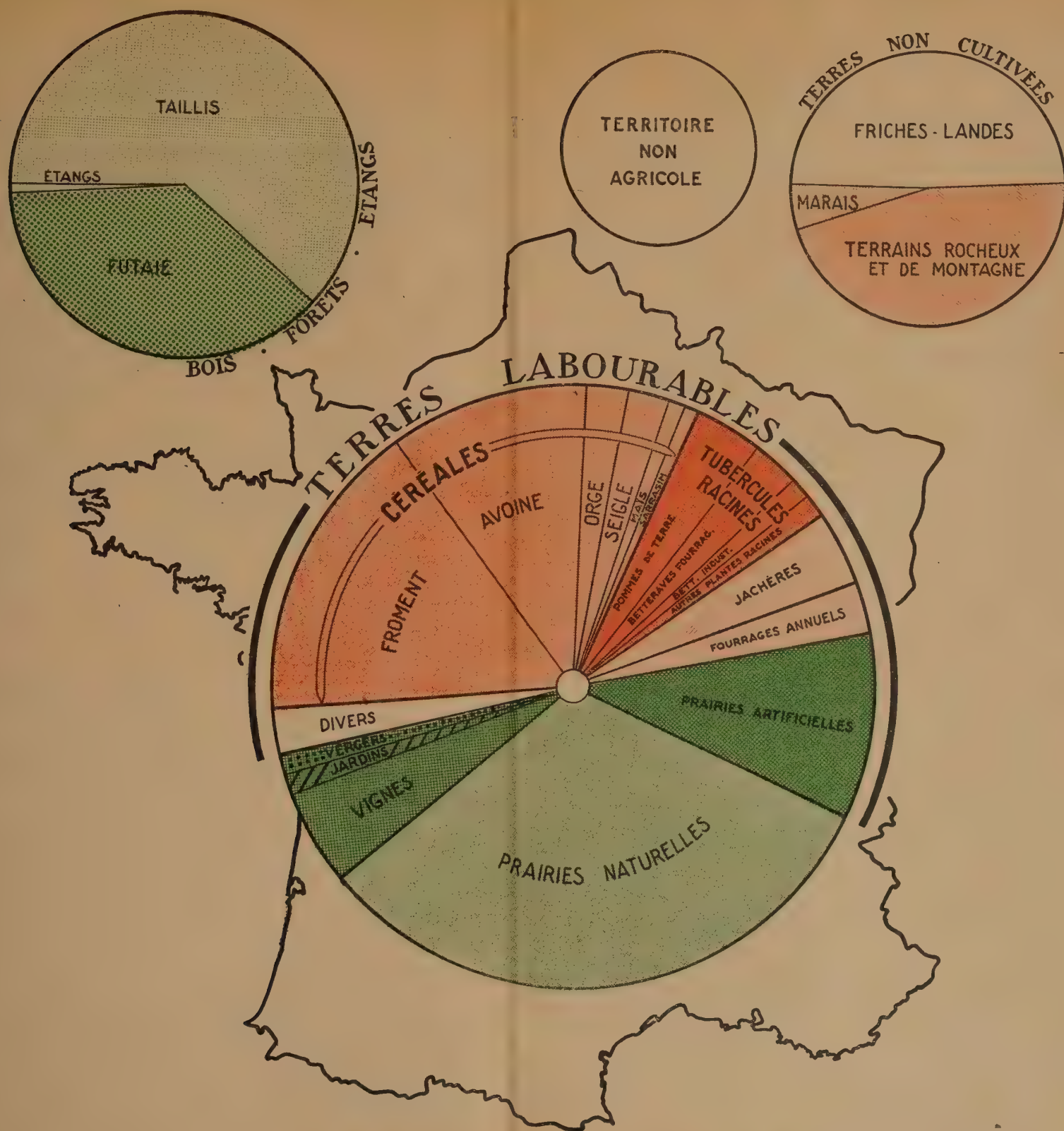
LES EXPLOITATIONS AGRICOLES EN FRANCE

	NOMBRE	Surface totale en hectares	Surface moyenne en hectares		% en nombre		% en surface	
0 à 10 ha.....	2.878.600	10.280.000	3,65	8,5	72,5	97,1	22,2	70,9
10 à 20 ha.....	593.150	9.460.000	16		15		20,6	
20 à 50 ha.....	383.370	12.980.000	34		9,6		28,1	
Plus de 50 ha..	114.000	13.486.000	132		2,9		29,1	
	3.966.120	36.204.000	11,64		100		100	

Ces exploitations sont mises en valeur par 3.656.000 propriétaires, fermiers et métayers.

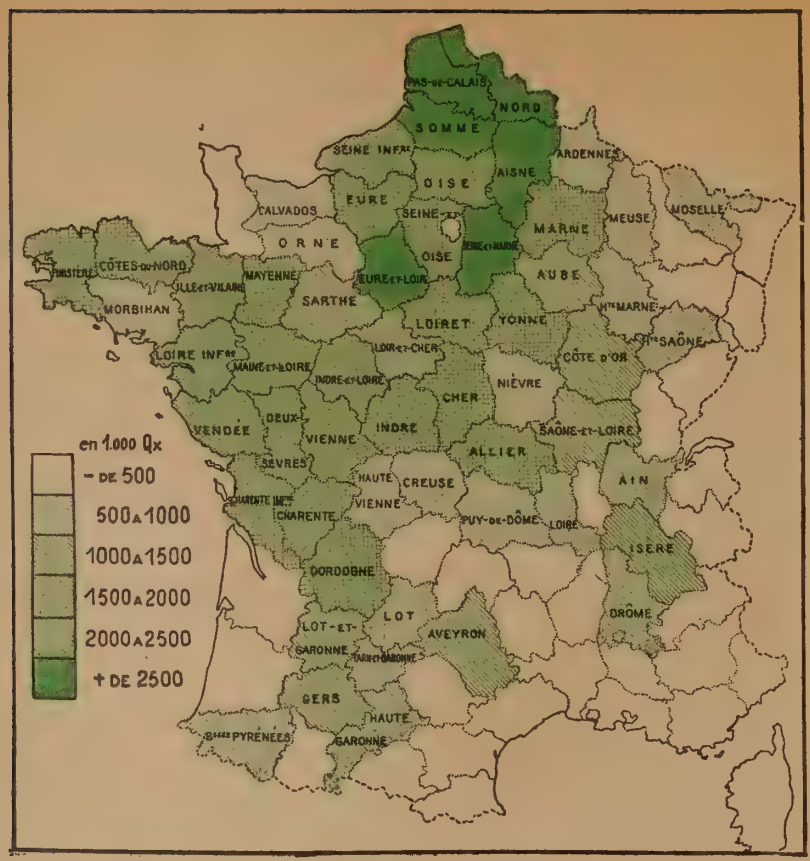
Les travaux agricoles sont effectués par 5.200.000 personnes de la famille des exploitants qui font seulement appel à 1.150.000 ouvriers permanents et 930.000 ouvriers saisonniers.

RÉPARTITION DU TERRITOIRE DE LA FRANCE

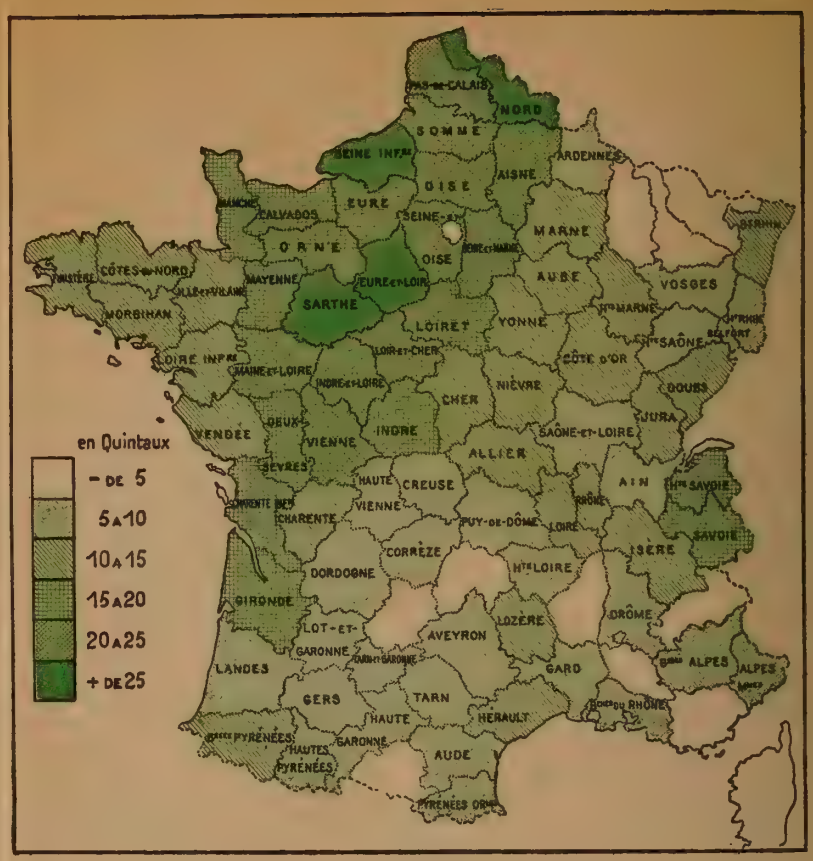


TERRES CULTIVÉES

LE BLÉ



Production départementale



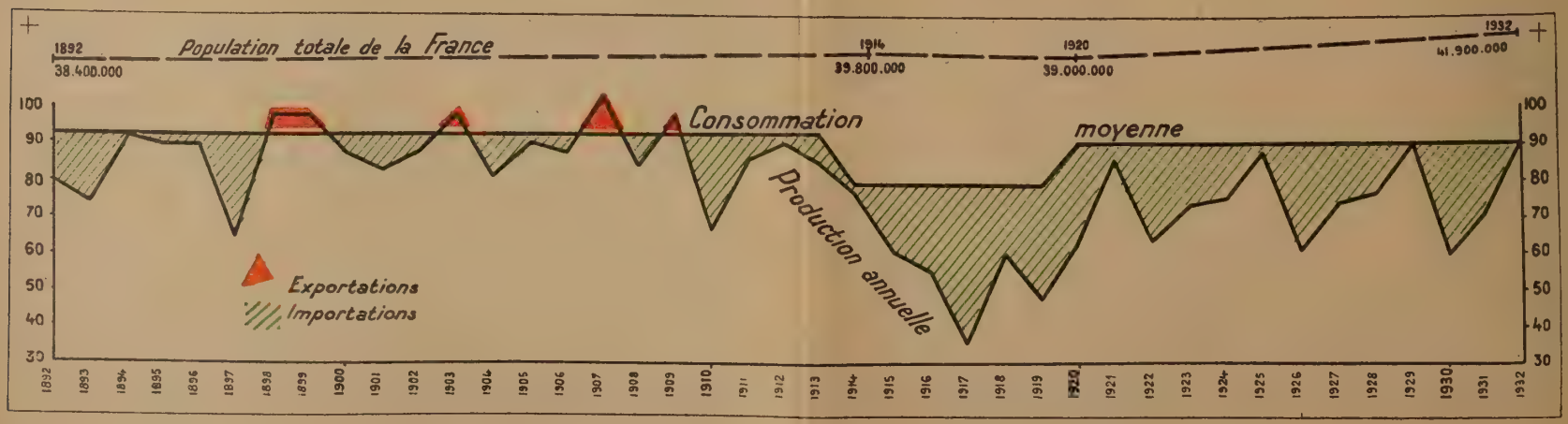
Rendements moyens par Ha cultivés

Dans le monde, la surface consacrée au blé est plus grande que celle d'aucune autre production. La France est le pays où la consommation des farines de froment par habitant est la plus élevée.

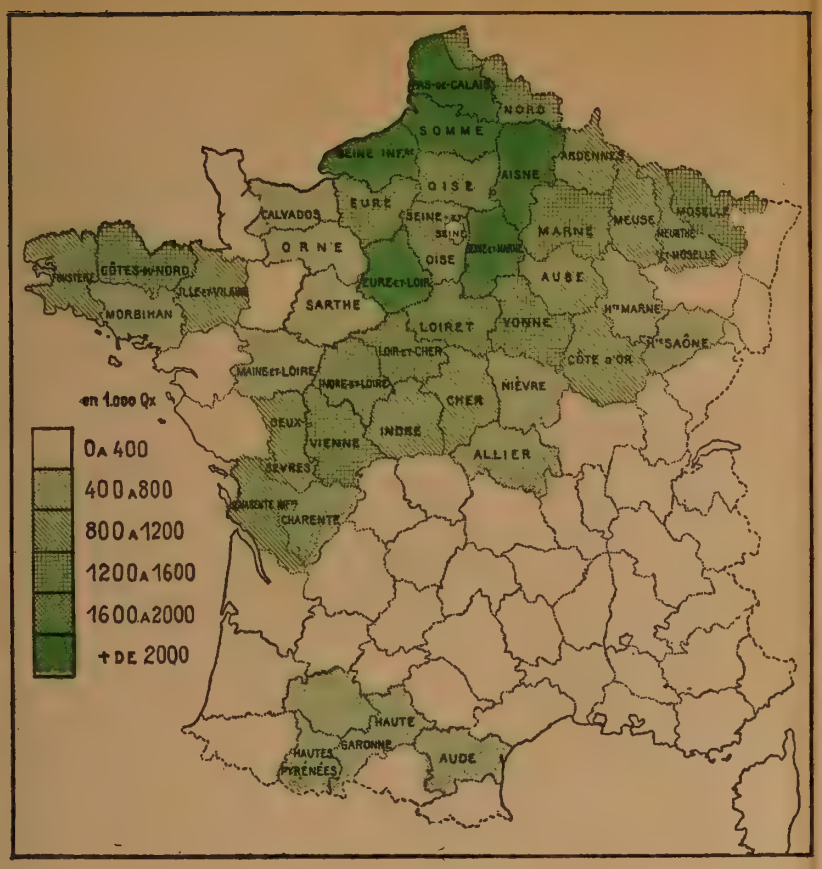
La production moyenne du blé en France est d'environ 90 millions de quintaux ; d'après les statistiques de l'enquête décennale elle a été de 94.621.283 quintaux en 1929 représentant plus de 16 millions de francs de grains et de paille.

La surface ensemencée a été de 5.455.890 hectares. Le rendement moyen de 17 quintaux 3 de grains et 27 quintaux 8 de paille à l'hectare. Les semailles se font principalement en hiver et dans une bien moindre proportion au printemps.

La production et le commerce du blé en France sont actuellement contrôlés par l'Office du blé.



AVOINE



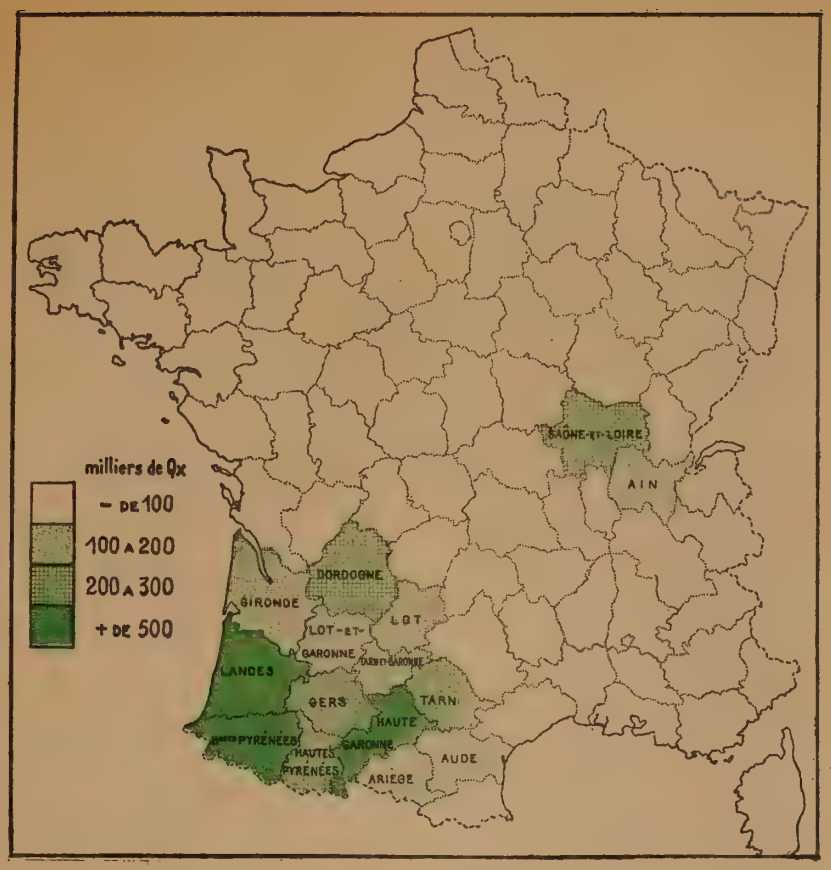
Production de l'avoine

L'avoine est cultivée presque exclusivement pour les animaux. Après une assez sensible augmentation au cours des dernières décades, les surfaces ensemencées en avoine sont annuellement d'environ 3.400.000 hectares.

Les rendements moyens sont assez variables, car ils sont très influencés par la climatologie de l'année en cours. Pour l'année 1929, ils s'établissaient à 15 quintaux 6 pour l'avoine d'hiver et 17 quintaux 4 pour l'avoine de printemps dont les ensemencements sont beaucoup plus importants. Ils portent sur environ 70 % de la surface totale cultivée.

Les rendements oscillent entre 8 et 30 quintaux métriques à l'hectare de moyenne suivant les départements. La production de paille d'avoine est estimée à environ 74 millions de quintaux. L'avoine n'est à peu près pas cultivée dans la région méridionale.

MAIS



Production du maïs en grains

La culture du maïs est en régression en France. Les grains, les farines sont utilisés pour l'alimentation humaine, pour l'alimentation des animaux, surtout de la volaille, et par l'industrie.

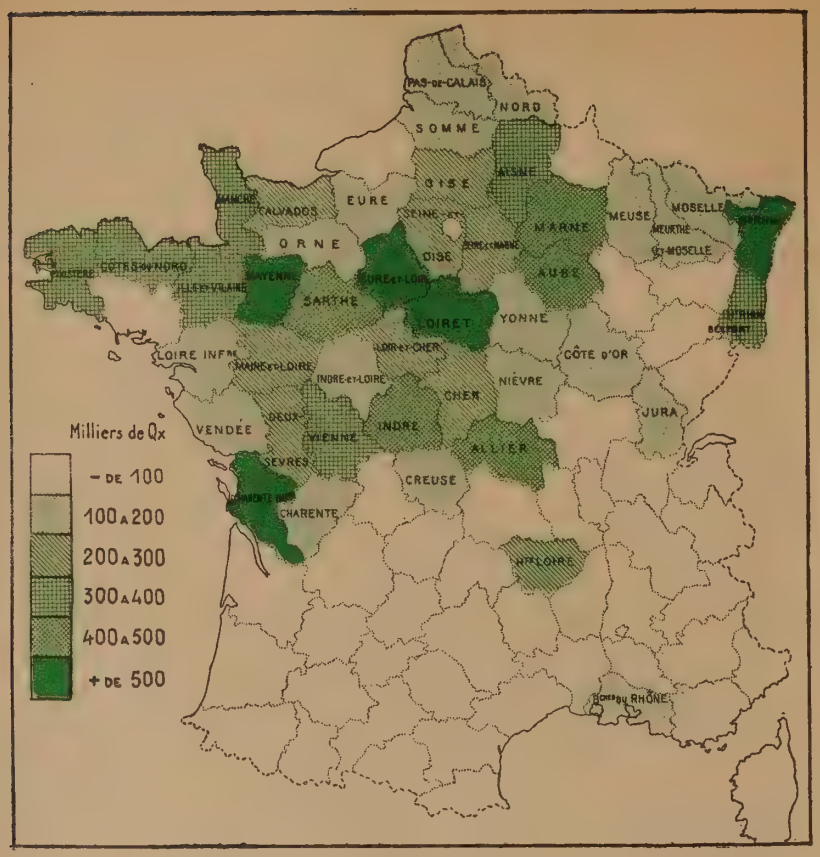
Le maïs est également cultivé pour faire du fourrage vert. Le maïs en grains occupe 320.000 hectares produisant 5.178.180 quintaux métriques. Le maïs cultivé en vert occupe 160.646 hectares fournissant 47.689.664 quintaux métriques de fourrages verts.

SARRAZIN

Le sarrazin est également désigné sous le nom de « blé noir ». Les surfaces consacrées au sarrazin sont en régression. Actuellement, elles représentent à peu près 300.000 Ha.

Le sarrazin est utilisé pour certaines fabrications : pain, pâtisseries, etc..., pour l'alimentation de la volaille. Récolté en vert, il sert à l'alimentation du bétail.

ORGE



Production de l'orge par département

En France, 785.859 hectares étaient consacrés en 1929 à la culture de l'orge. Elle est utilisée pour plusieurs usages, principalement en vue de la fabrication de la bière, après qu'elle a été soumise au maltage.

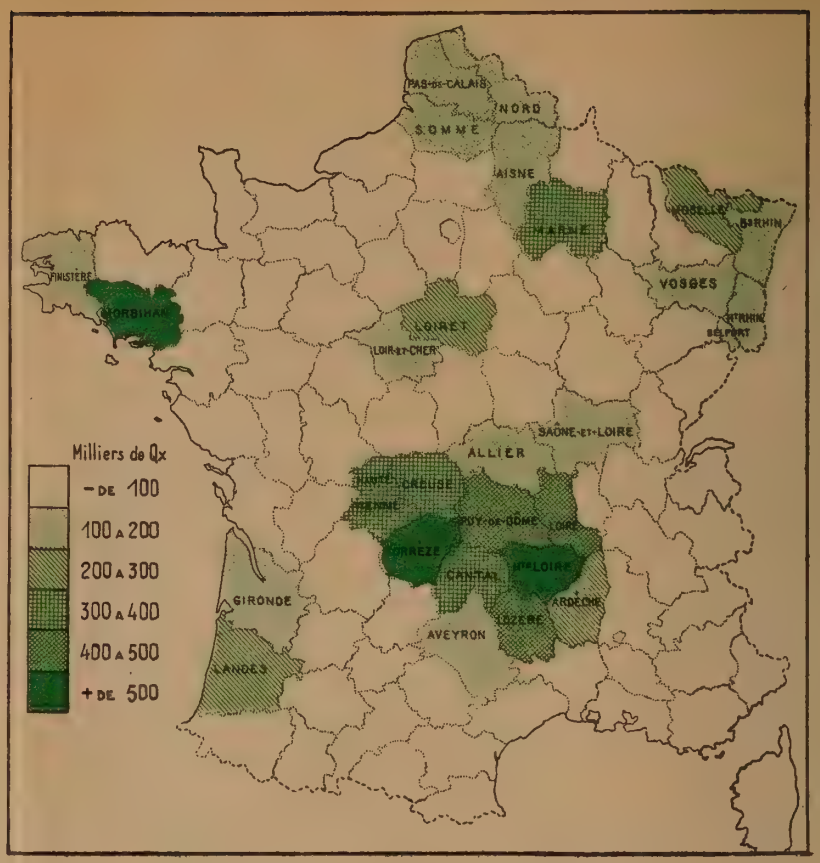
La farine d'orge est utilisée dans diverses préparations destinées à l'alimentation humaine et elle sert également à l'alimentation du bétail.

Il existe des orges d'hiver et des orges de printemps ; les premières occupent une place un peu moins importante que les orges de printemps. Le rendement moyen est de 17 quintaux 5 par hectare.

MILLET

Cette culture est très peu répandue en France. Les surfaces qui lui sont consacrées sont d'environ 7.000 Ha.

SEIGLE



Production du seigle par département

Le seigle est communément appelé le blé des pays froids et des terres pauvres.

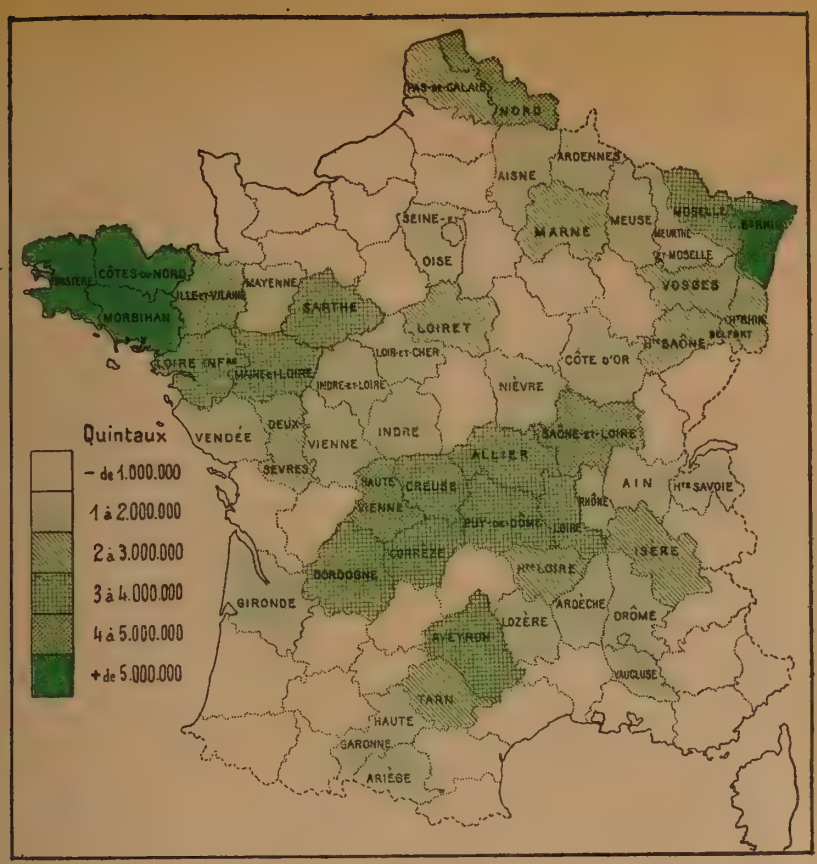
En France les surfaces consacrées au seigle se réduisent de plus en plus et la farine de seigle n'occupe plus qu'une très petite place dans l'alimentation humaine. Il sert surtout à des fabrications spéciales : biscuits, pains d'épices, etc...

L'association du blé et du seigle dans les ensemencements est connue sous le nom de « méteil ».

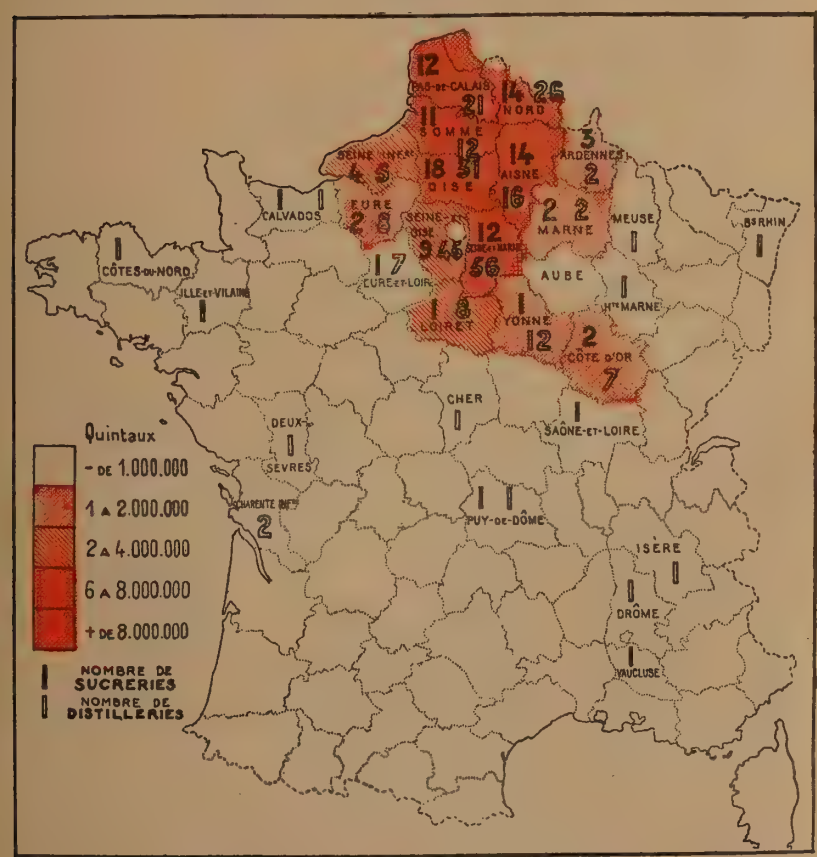
Les surfaces cultivées étaient de 723.914 hectares en seigle et 64.659 hectares de méteil.

Ces surfaces ont fourni plus de 10 millions de quintaux ; le rendement moyen du seigle cultivé pour le grain est d'environ 13 quintaux à l'hectare.

Le seigle est également cultivé pour être récolté en vert et fournir un fourrage hâtif qui est très apprécié par le bétail ; il se cultive sur environ 32.000 hectares.



Production de la pomme de terre



Production de la betterave à sucre
Nombre des sucreries et des distilleries

POMMES DE TERRE

La surface consacrée à la culture de la pomme de terre était d'après l'enquête décennale de 1929 de 1.322.794 Ha dont 44.305 Ha réservés à la production de la pomme de terre de primeur. Ces cultures fournissent 155.294.058 Qm.

La pomme de terre joue un rôle de premier ordre dans l'alimentation humaine où elle vient après le pain.

Elle est également utilisée pour la nourriture des animaux, principalement des porcs et par l'industrie qui en tire l'amidon, la fécule et de l'alcool.

Les variétés cultivés sont très nombreuses et correspondent à des époques de maturité et à des utilisations alimentaires très différentes.

La production et le commerce des pommes de terre de semence font l'objet de contrôles sur pied du point de vue phytosanitaire et pureté de la variété. Actuellement 150.000 Qm plants de pomme de terre sont ainsi officiellement contrôlés.

BETTERAVES INDUSTRIELLES

Les betteraves sont cultivées soit en vue de la production sucrière, soit pour la distillation et la fabrication de l'alcool.

Les betteraves sucrières occupent une plus grande surface 279.149 Ha produisant 69.278.383 Qm, contre 31.065 Ha de betteraves de distillerie donnant 8.137.333 Qm.

En France, il y a 125 sucreries et 3.017 distilleries industrielles.

Les entreprises de sucrerie sont beaucoup plus importantes en raison de la complexité de la fabrication, du matériel et des intallations nécessaires.

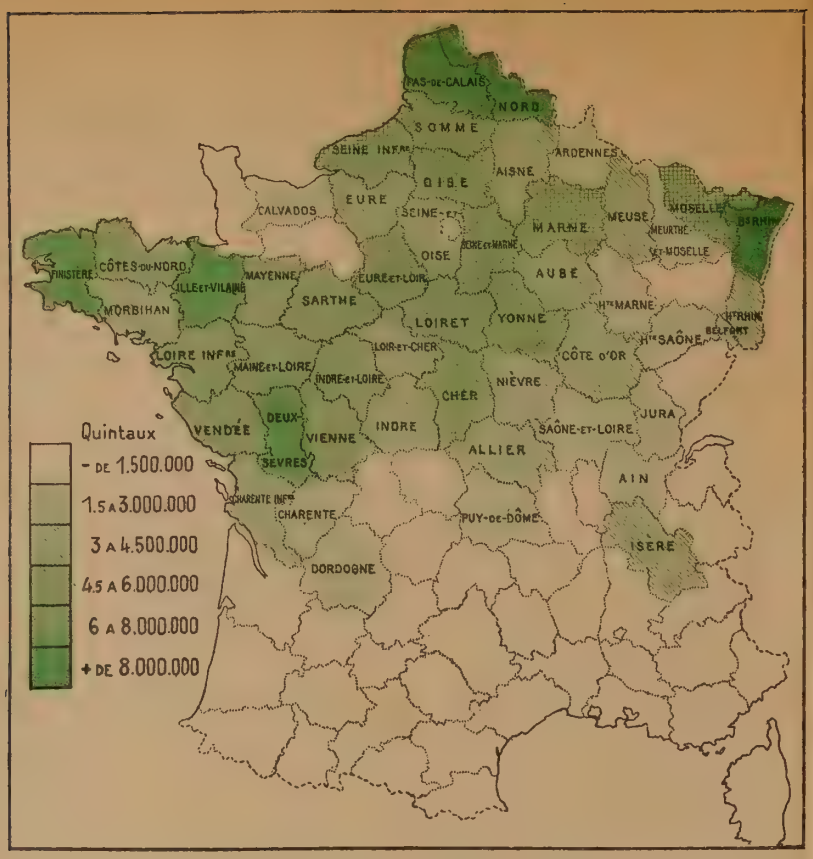
Il y a seulement 7 coopératives de sucrerie. Les distilleries qui peuvent comporter un équipement plus simple sont plus nombreuses ; 448 sont constituées sous forme coopératives et de nombreuses distilleries (plus de 20.000) appartiennent à des exploitants agricoles qui travaillent leur propre production.

TOPINAMBOUR

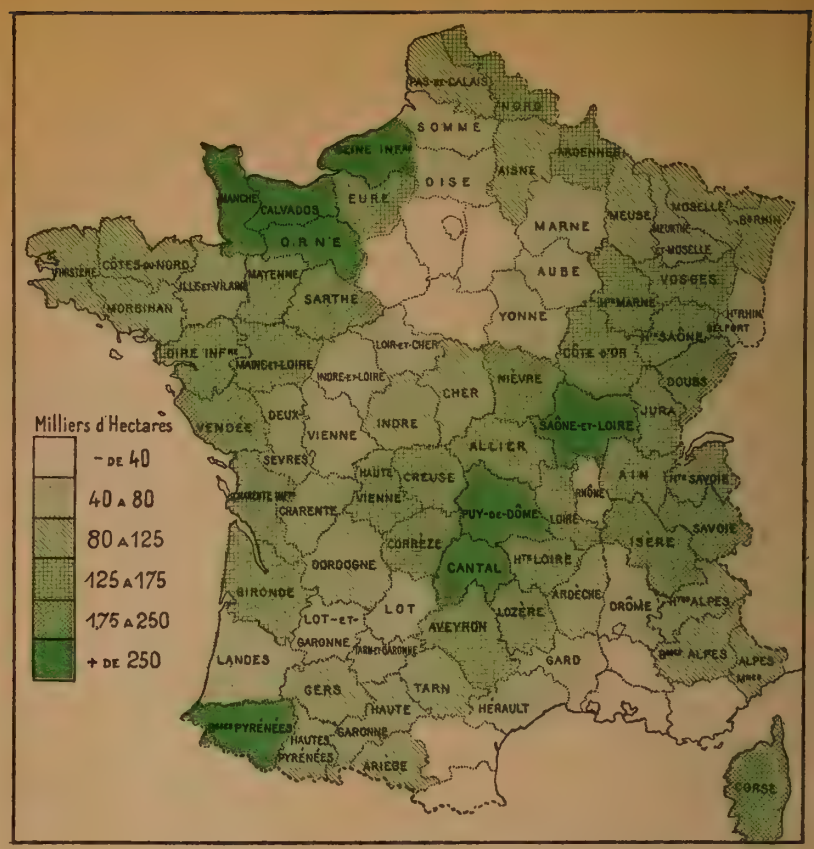
Cette plante est surtout cultivée dans les terres légères. Elle occupe 130.000 Ha. Elle est destinée à l'alimentation du bétail.

CAROTTES, CHOUX-RAVES NAVETS et AUTRES PLANTES RACINES

Ces cultures occupent 210.000 Ha environ.



Production des betteraves fourragères



Surfaces consacrées aux prairies naturelles

BETTERAVES FOURRAGÈRES:

Elles sont cultivées sur 900.000 Ha environ.

PRAIRIES NATURELLES ET PERMANENTES

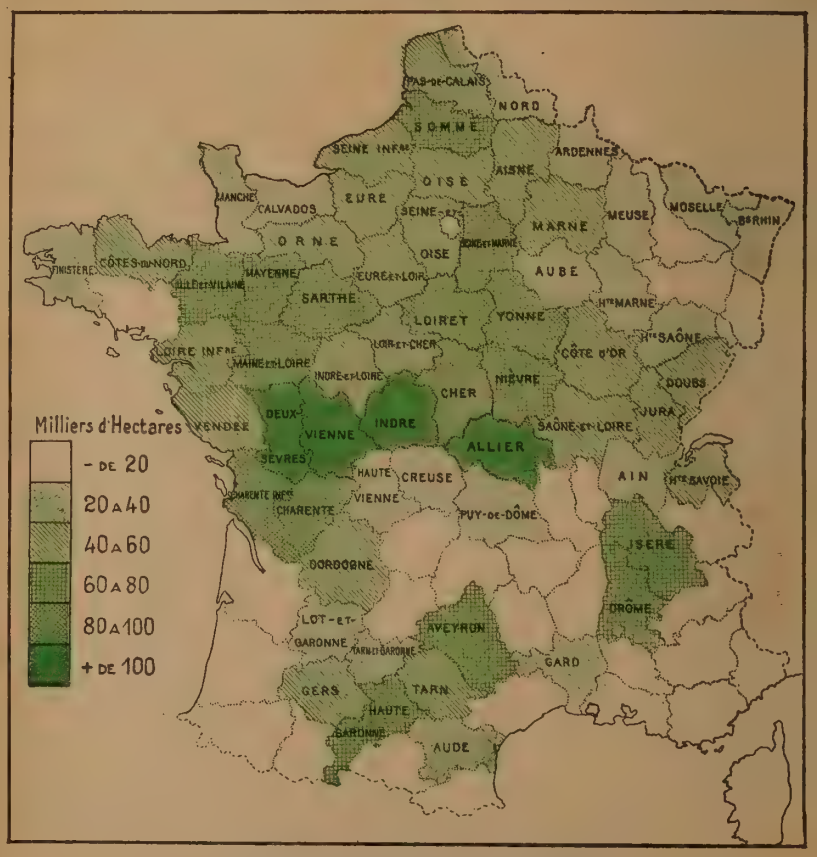
Elles sont exploitées soit pour la production des foins, soit pâturées par le bétail. Suivant leurs richesses, elles sont désignées sous le nom d'herbage ou de pacage.

Les prairies naturelles pour la production du fourrage occupent environ 5.100.000 Ha répartis sur la presque totalité du territoire, principalement le Nord-Ouest, l'Ouest, le Centre et l'Est.

Les herbages couvrent 1.600.000 Ha environ.

Le grand centre herbager est celui de la Normandie, vient ensuite celui du Charolais et du Nivernais, ceux de Flandre et de l'Artois, du Marais Vendéen et Charentais et enfin ceux du Massif Central.

Les pacages s'étendent sur 3.610.000 Ha. Ils intéressent les régions de montagne utilisées pendant les périodes d'estivage, les régions de landes, Champagne, Sologne, Causses, Landes, etc... propres à l'élevage du mouton.



Surface des prairies artificielles

FRUITS ET LÉGUMES

PRAIRIES TEMPORAIRES et ARTIFICIELLES

Les prairies temporaires et artificielles couvrent 3.644.000 Ha.

Les prairies temporaires sont constituées par des mélanges de légumineuses et de graminées. Elle sont cultivées sur 560.000 Ha.

Les prairies artificielles couvrant 3.100.000 Ha, sont constituées uniquement par des légumineuses, notamment : luzerne, trèfle, sainfoin, lotier. Elles sont presque toujours fauchées en vue de la récolte du foin destiné à l'alimentation du bétail.

FOURRAGES ANNUELS

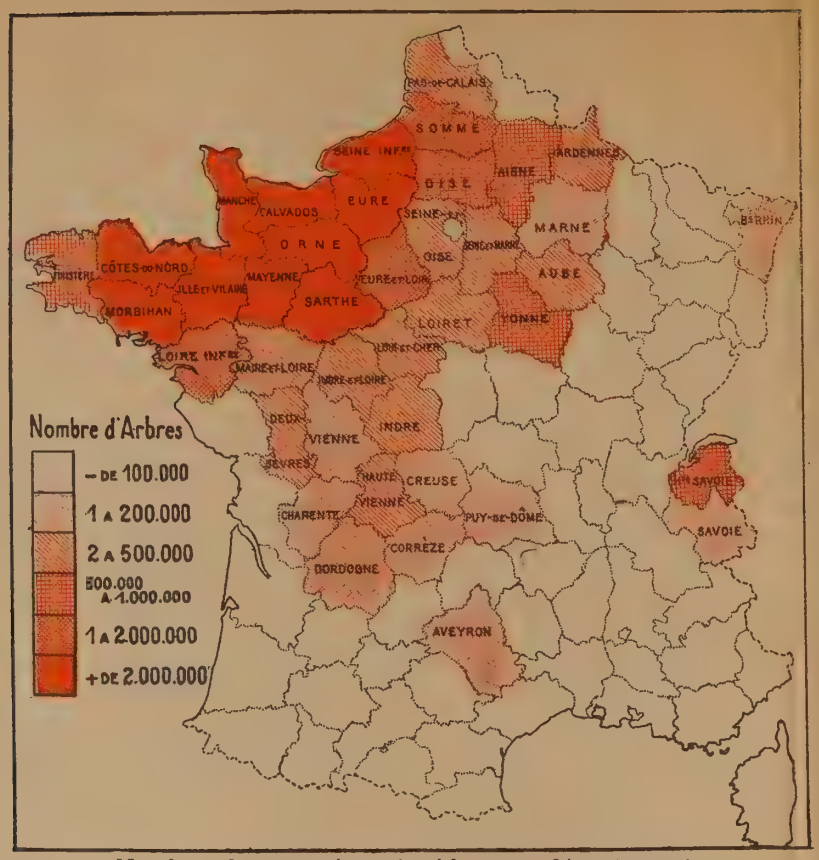
Neuf cent mille Ha sont occupés par les fourrages annuels. Ces fourrages comprennent notamment des légumineuses, tels que : trèfle incarnat, vesce, gesce, féverole, des crucifères : des choux, navette, colza, des graminées : maïs seigle, sarrazin, récoltés avant complète maturité.

Principales productions fruitières et maraîchères

Les surfaces consacrées à la culture maraîchère, à l'horticulture fruitière et florale sont en accroissement depuis ces dernières années. La valeur de leurs produits les situe parmi les plus importantes de la production végétale.

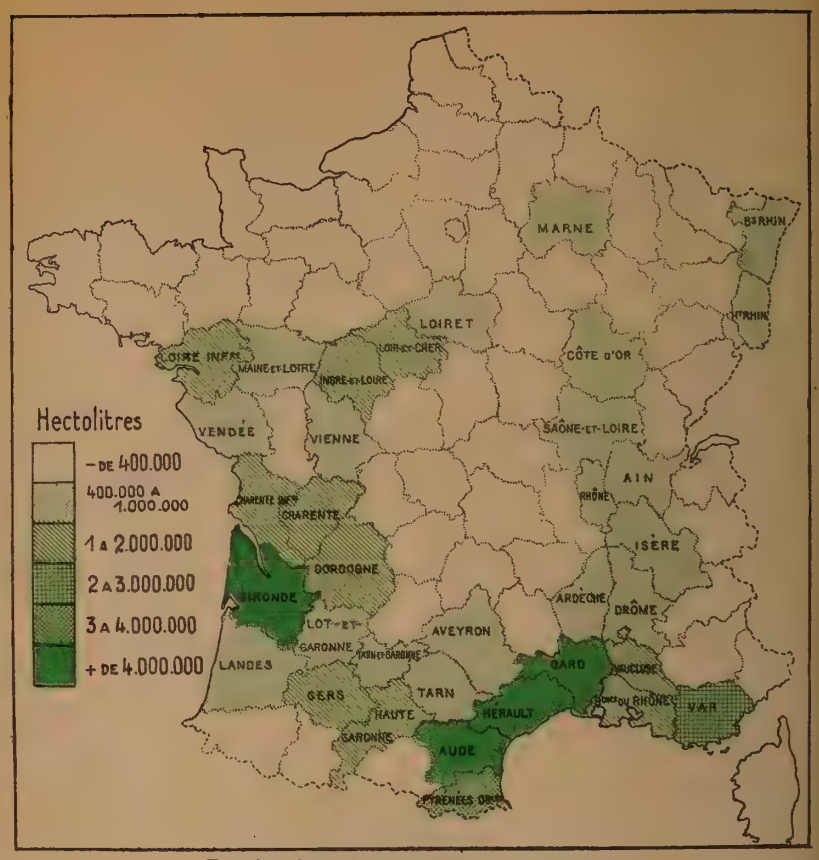
Fruits	Production en qx	Surfaces en ha ou équivalent
Fruits à cidre	15 à 35 millions	350.000
Pommes de table .	1 à 2 millions 1/2	70.000
Poires de table ..	500.000 à 1.200.000	23.000
Châtaignes	1.500.000 à 2.500.000	250.000
Noix	250.000 à 700.000	50.000
Olives	270.000 à 550.000	100.000
Pêches	350.000 à 900.000	16.000
Abricots	80.000 à 280.000	9.000
Cerises	500.000 à 900.000	23.000
Prunes	400.000 à 900.000	45.000
Prunes à pruneaux	40.000 à 90.000	7.000
Fraises	140.000 à 200.000	5.000
Framboises	8.000 à 15.000	1.000
Cassis	30.000 à 60.000	3.000
Groseilles	30.000 à 45.000	1.600
Amandes	60.000 à 100.000	15.000
Figues fraîches ..	30.000 à 50.000	3.000
Raisins de table ..	1 à 2 millions	26.000
Légumes		
Haricots verts.....	500 à 800.000	12.000
Haricots secs	1 million à 1.500.000	90.000
Pois verts	1.200.000	22.000
Pois secs	250.000	22.000
Lentilles.....	50 à 70.000	5.000
Ail	150.000	3.200
Artichauts.....	700.000	5.000
Asperges	360.000	10.000
Carottes.....	1.700.000	11.000
Champignons	50.000 à 170.000	
Truffes	2000. à 3.500	
Citrouilles	1.000.000	4.000
Cornichons et Concombres	50.000 à 100.000	1.500
Melons	500 à 900.000	4.000
Oignons	1.300.000 à 1.900.000	8.000
Tomates.....	1.500.000	5.000
P. d. t. primeurs ..	5.000.000	45.000
Choux	4.800.000	18.000
Choux-fleurs	1.700.000	10.000
Navets.....	500.000	3.000
Poireaux	750.000	3.000

POMMIERS A CIDRE



Nombre de pommiers à cidre par département

VIGNES



Production départementale du vin

PLANTES INDUSTRIELLES DIVERSES

Tabac. — La production du tabac est réglementée. Elle occupe 14.866 Ha, principalement dans les départements de la Dordogne, du Lot-et-Garonne, du Bas-Rhin, de la Gironde, du Lot, de l'Isère, etc...

Houblon. — Le houblon est cultivé sur 4.262 Ha, principalement dans l'Est : Bas-Rhin, Meurthe-et-Moselle, Moselle, Haut-Rhin. Il y a également quelques houblonnières en Bourgogne, et dans le Nord.

Lin et Chanvre. — Ces cultures sont en régression.

Lin : 46.000 Ha, dans les départements de Seine-Inférieure, Côtes-du-Nord, Nord, Oise, Eure, Somme, Pas-de-Calais.

Chanvre : 4.000 Ha, dans les départements de la Sarthe, Meurthe-et-Moselle, Indre-et-Loire, Maine-et-Loire, Côtes-du-Nord.

Elles bénéficient d'une prime spéciale d'encouragement.

La vigne y est cultivée au sud d'une ligne Vannes, Paris, Mézières, soit sur les 4/5 environ du territoire.

Elle couvre 1.900.000 hectares, le 1/18 environ du territoire cultivé. Sa production moyenne de 60 millions d'hectolitres de vin qui atteint 90 millions d'hectolitres en très bonne année, représente de 1/10 à 1/8 de la valeur de production végétale agricole française.

Dans l'agriculture nationale, la vigne a la même importance économique que le blé, le lait, ou l'ensemble des cultures industrielles.

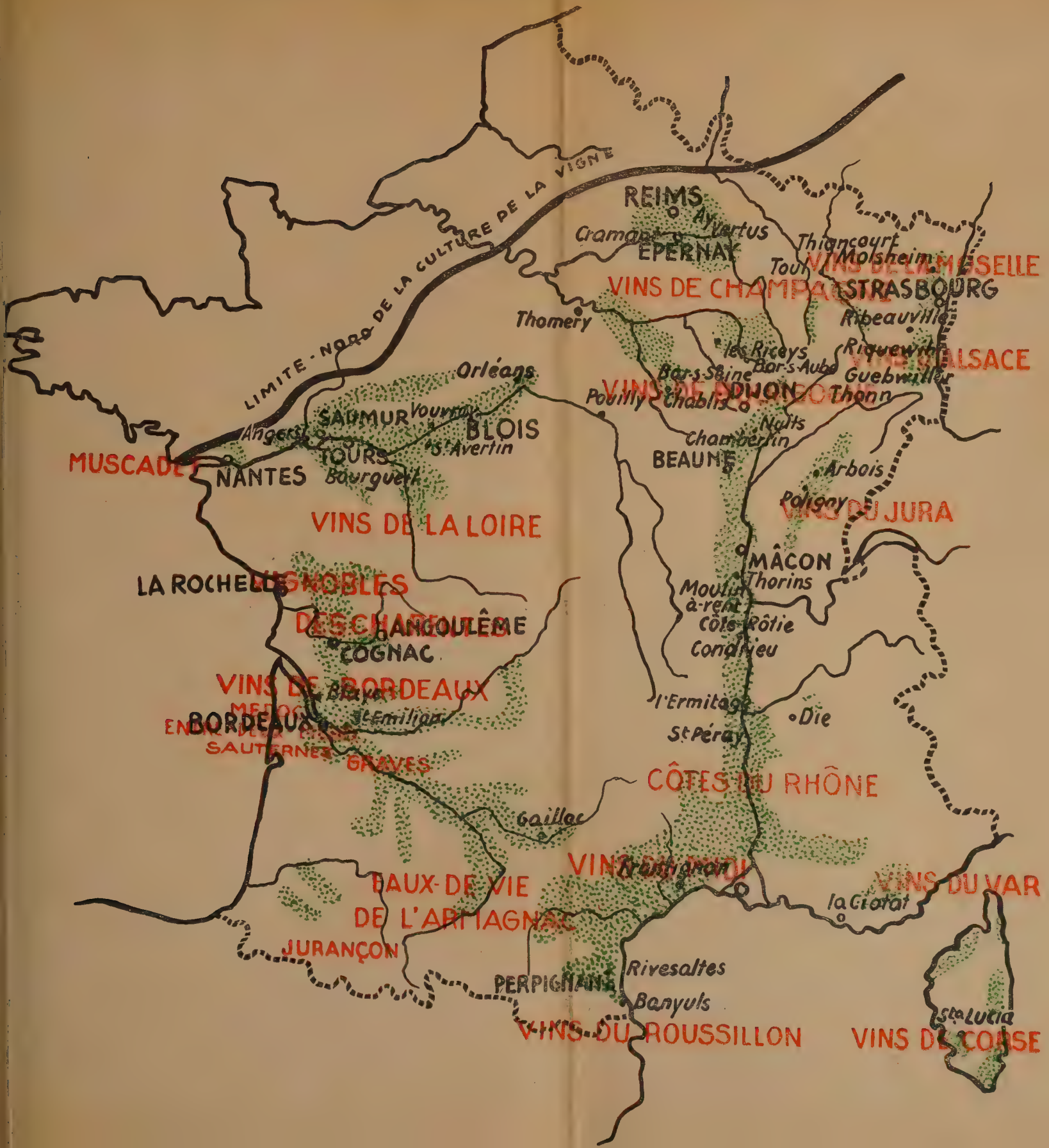
La moitié du vignoble français est en monoculture et 270.000 familles de vignerons, c'est-à-dire plus d'un million de personnes, vivent uniquement de la vigne.

Beaucoup de petits producteurs pour procéder à une vinification rationnelle et économique ont recours à la Coopération. La cave coopérative assure la vinification, la conservation, les traitements, le warrantage et la vente des vins.

Il existe aujourd'hui en France près de 2.000 caves coopératives.

Alcool. — En dehors des alcools réputés tels que le Cognac, l'Armagnac et les Marcs des différentes régions, l'alcool de vin est à la base de la fabrication des vins de liqueurs, des apéritifs et des liqueurs.

CARTE DES RÉGIONS VINICOLES

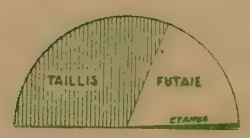


LES FORÊTS

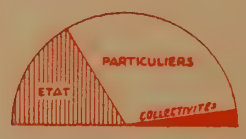
Les bois et forêts couvrent 104.000 km², soit près d'un cinquième de la surface de la France. Les départements les plus boisés sont les Landes, la Gironde, la Dordogne, les Vosges, etc. Dans certaines régions un gros effort a été fait pour reboiser les terrains incultes et ceux des hauts sommets.

CARTE FORESTIÈRE

(d'après l'atlas du Comité National de Géographie)

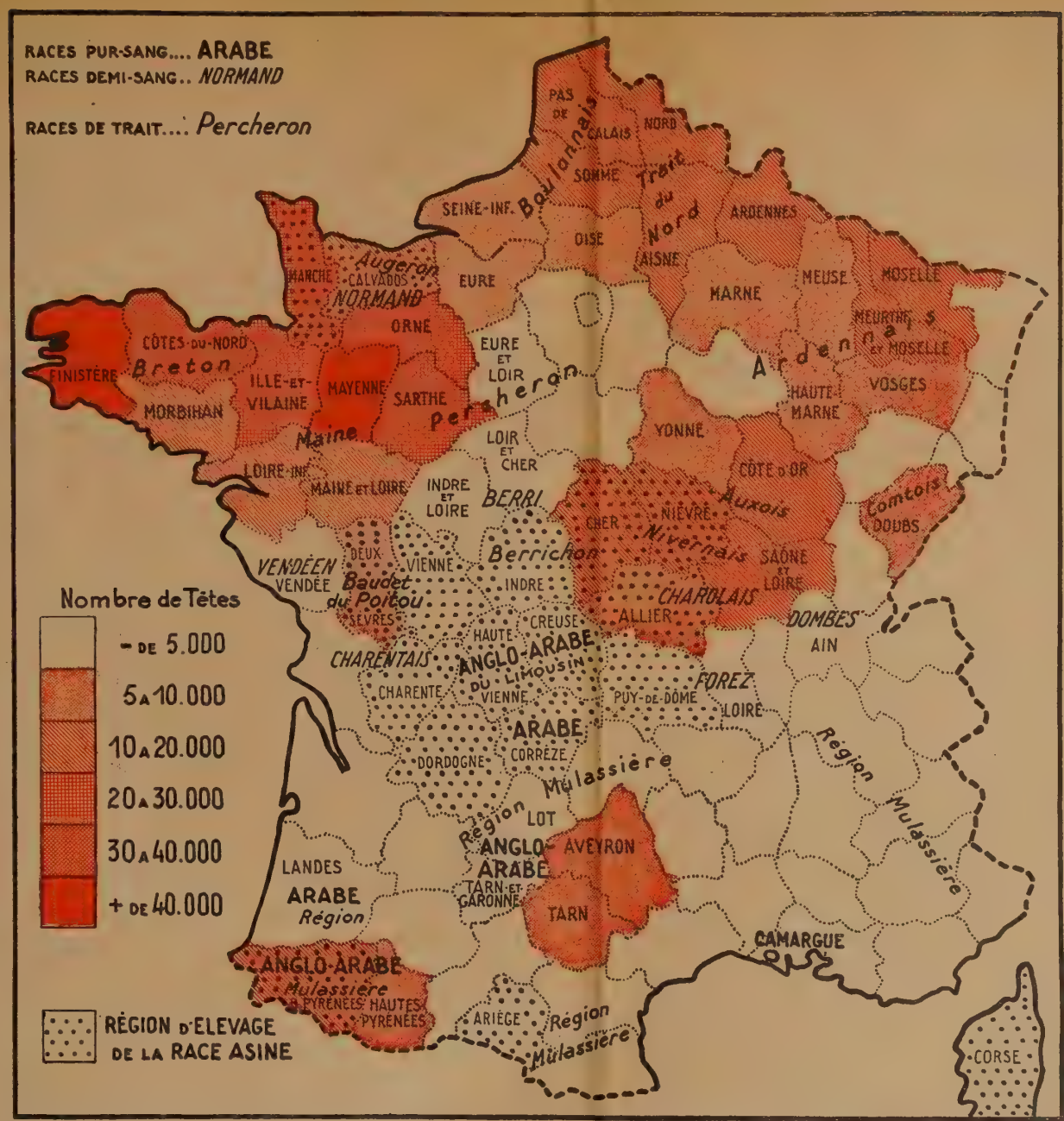


Répartition des forêts



Exploitants forestiers

CHEVAUX ET BAUDETS



Carte des effectifs des chevaux d'élevage (chevaux de travail exclus)

En 1929, il existait en France 3.136.000 chevaux, 244.000 ânes et 150.000 mulets.

Le développement de la motorisation n'a pas modifié sensiblement l'effectif des chevaux en France. Cependant, il en a profondément modifié l'utilisation.

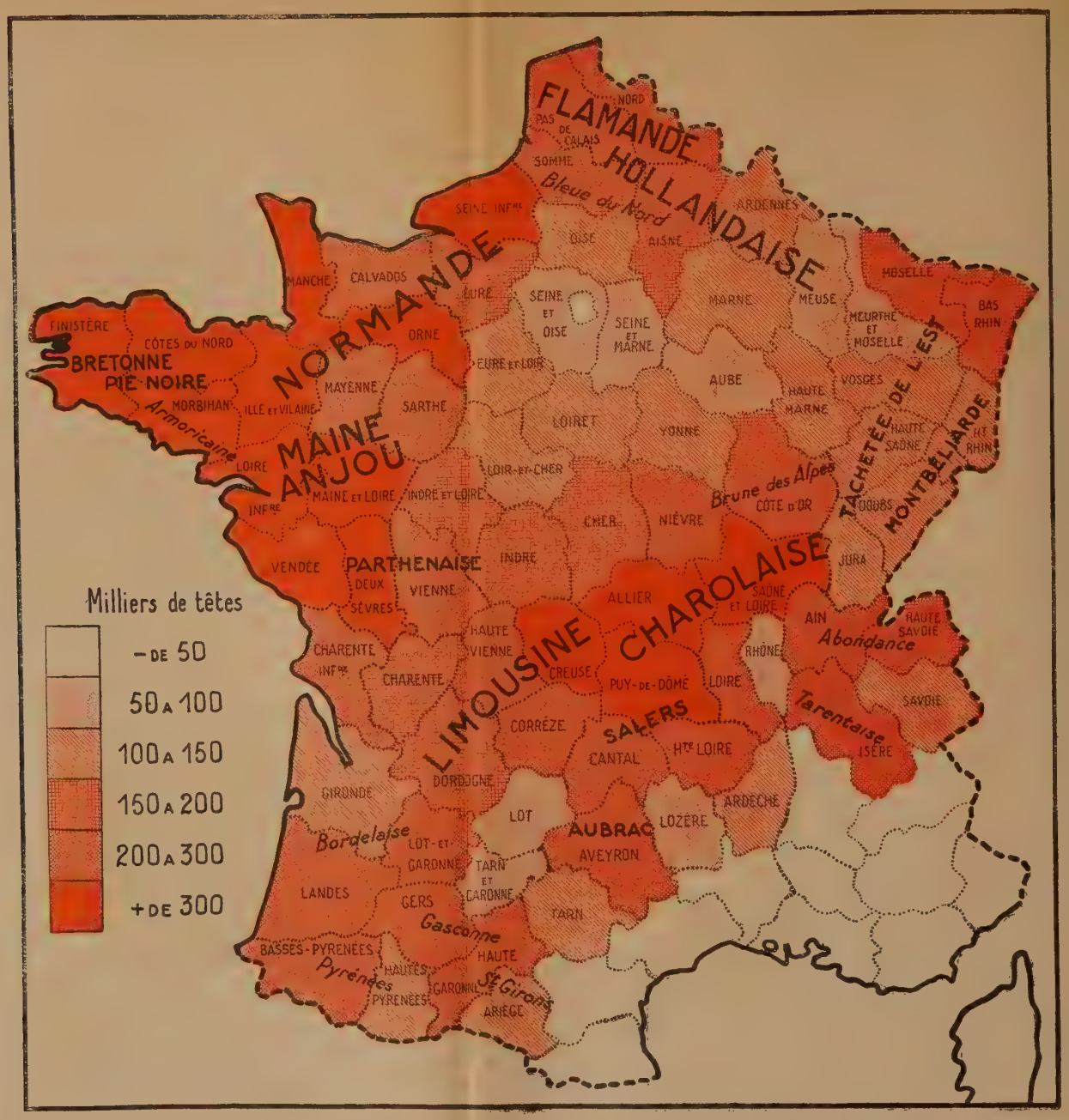
Le cheval de selle a presque complètement disparu sauf pour les besoins de l'armée eux-mêmes réduits par rapport à la période d'avant-guerre.

Le cheval de trait léger, remplacé progressivement par l'automobile est également en régression.

Par contre, le cheval de trait lourd reste irremplaçable en culture où il effectue les gros travaux : labours, récoltes, transports lourds à petite distance, plus économiquement que le camion ou le tracteur. Plus de la moitié du cheptel est composé de mâles entiers, de juments, de chevaux hongres utilisés pour le travail.

Les baudets du Poitou et des Pyrénées restent d'incomparables géniteurs pour la production du mulet qui demeure l'animal de trait par excellence des régions sèches de l'Afrique du Nord.

LES BOVINS



L'espèce bovine est de toutes les espèces domestiques, celle qui joue le rôle le plus important en France.

Si l'on tient compte des poids des troupeaux, on constate que sur 8.800.000 tonnes que pèse le troupeau français, les bovins comptent pour 6.300.000, soit environ les 3/4.

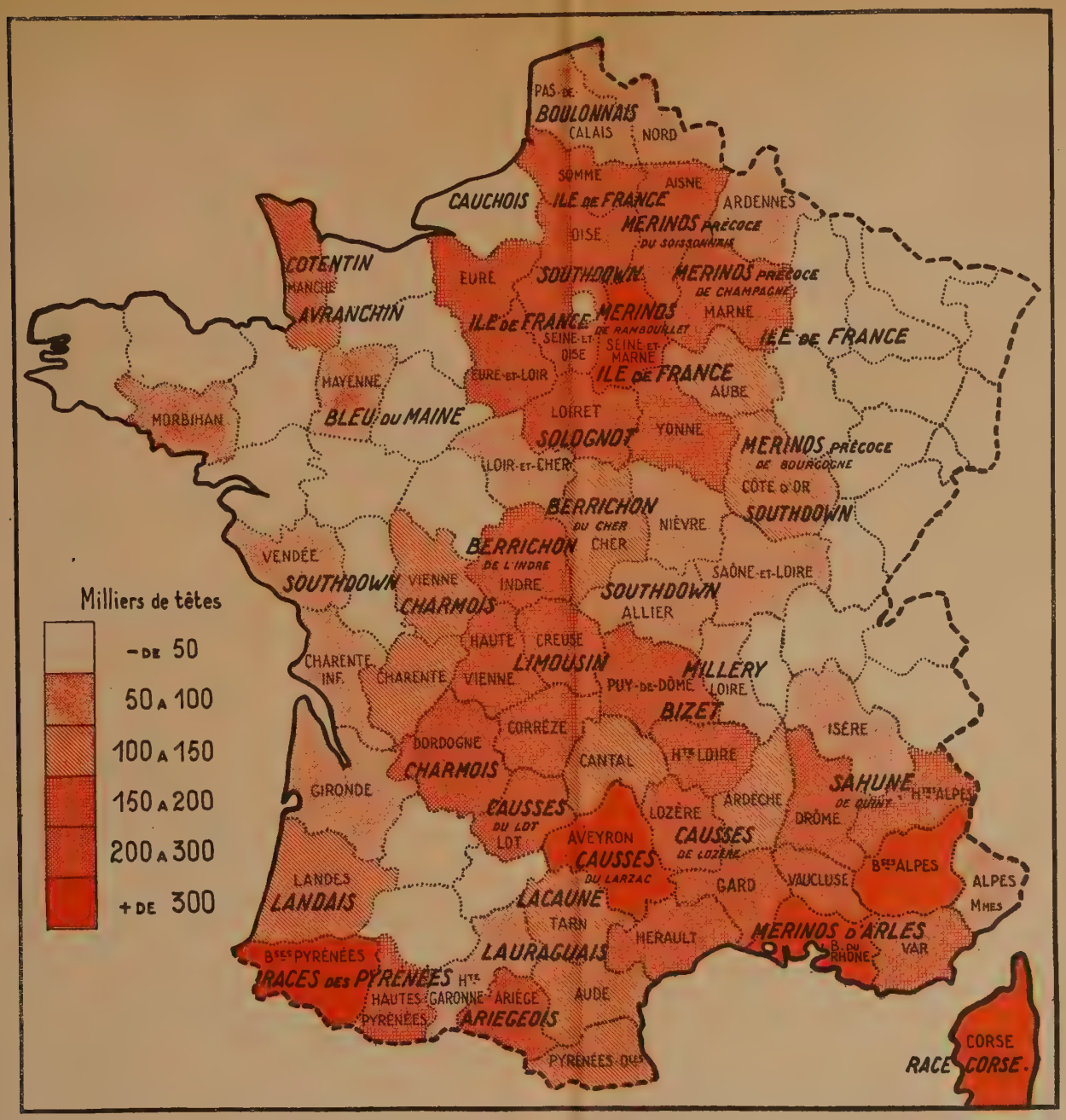
Le troupeau bovin français comporte environ 16.500.000 têtes.

Les races françaises ont des aptitudes très variées.

Une grande partie de l'effectif du troupeau bovin est composée de vaches laitières en production. Elles sont plus spécialement réparties dans le Nord et sur le littoral Ouest. Une notable proportion du troupeau est orientée vers la production de la viande, et présente des aptitudes remarquables pour l'engraissement. Ces races sont exploitées notamment sur les herbages du Centre, Limousin et Charollais.

Dans les régions de moindre fertilité, on élève des races à toutes fins (lait, viande et travail) qui sont en amélioration constante.

LES OVINS



Les effectifs du cheptel ovin sont en régression régulière depuis près de cinquante ans par suite de l'évolution de méthodes culturales, de la suppression de jachère, de l'amélioration des pâturages, de l'extension de l'élevage bovin et de la production laitière, de l'abaissement du prix de la laine, et de la rareté des bergers.

Actuellement 11 millions de têtes de moutons sont élevés soit dans les fermes industrielles de l'Ile de France et du Nord de la France (races précoces), soit sur les herbages des régions de l'Ouest (races d'herbage), soit sur les plateaux secs et calcaires de l'Est, du Berry, des Causses et dans les régions de montagnes : Massif Central, Alpes, Pyrénées (races de pays rustiques et races laitières).

La production ovine est la suivante : viande 900.000 quintaux qui ne suffisent pas à la consommation car la France importe d'Afrique du Nord et de l'Etranger des moutons sur pieds et des viandes fraîches et congelées.

Laine..... 17 millions de kgs

Fromage ..... 15 millions de kgs, notamment le fromage de Roquefort de réputation mondiale.

Les divers revenus du troupeau représentent les poucentages suivants :

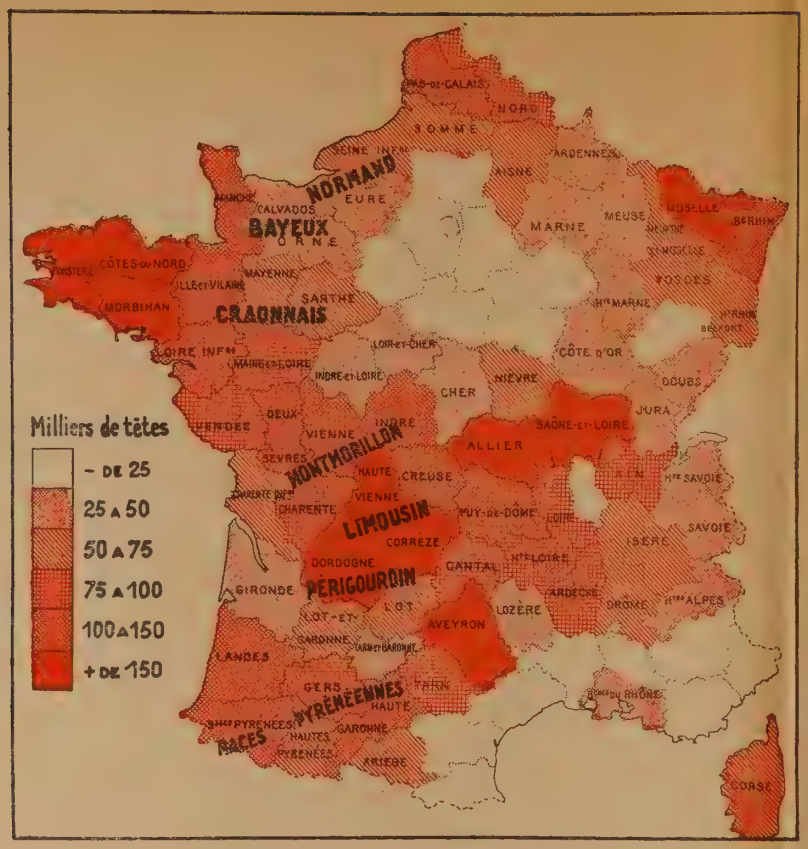
Viande : 82 %. — Fromage : 10 %. — Laine : 8 %

LES PORCINS

La carte ci-contre donne les effectifs de porcins par département, avec les berceaux des principales races françaises qui offrent des qualités remarquables.

Toutefois de nombreuses variétés anglaises : Yorkshire, Berkshire, Large-white ont été introduites en France et sont exploitées soit en race pure, soit en croisements industriels pour la production de porcs d'engraissement rapide dans les porcheries industrielles.

Le porc tient une place importante dans l'élevage français ; les effectifs du troupeau sont de 6.600.000 têtes.



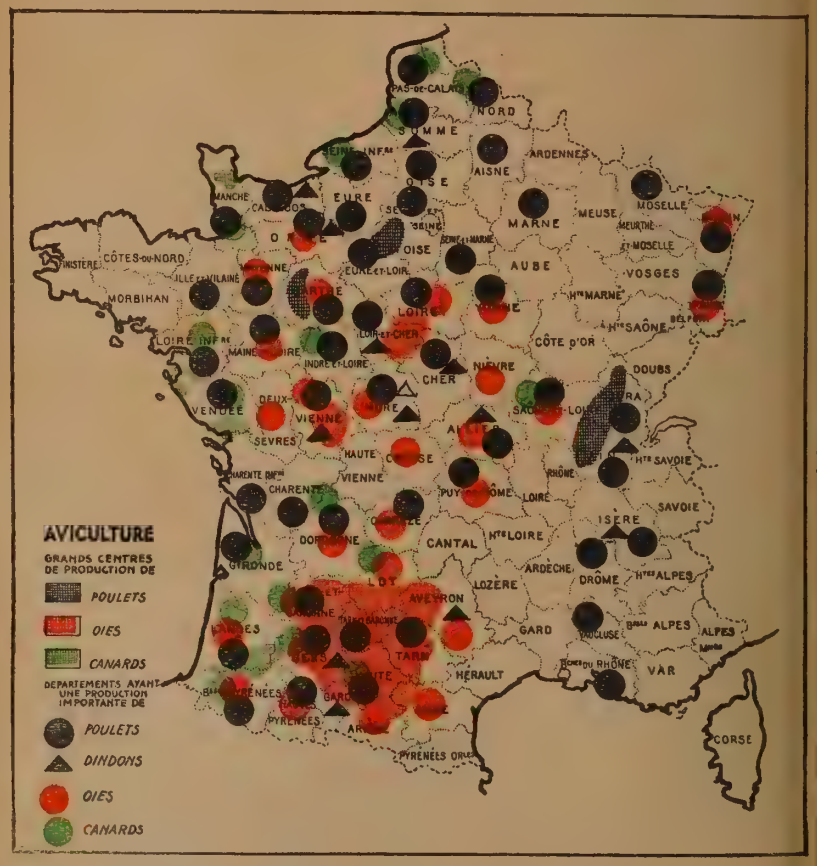
Effectifs porcins par département

BASSE-COUR

La production totale de la basse-cour est estimée au 2/3 environ de la valeur de la production du blé (paille non comprise), ce qui explique le rôle important qu'elle joue dans l'agriculture française d'autant plus qu'elle fournit à l'exploitant des recettes régulières échelonnées sur toute l'année, contrairement à la plupart des récoltes qui ne sont vendues qu'une fois par an.

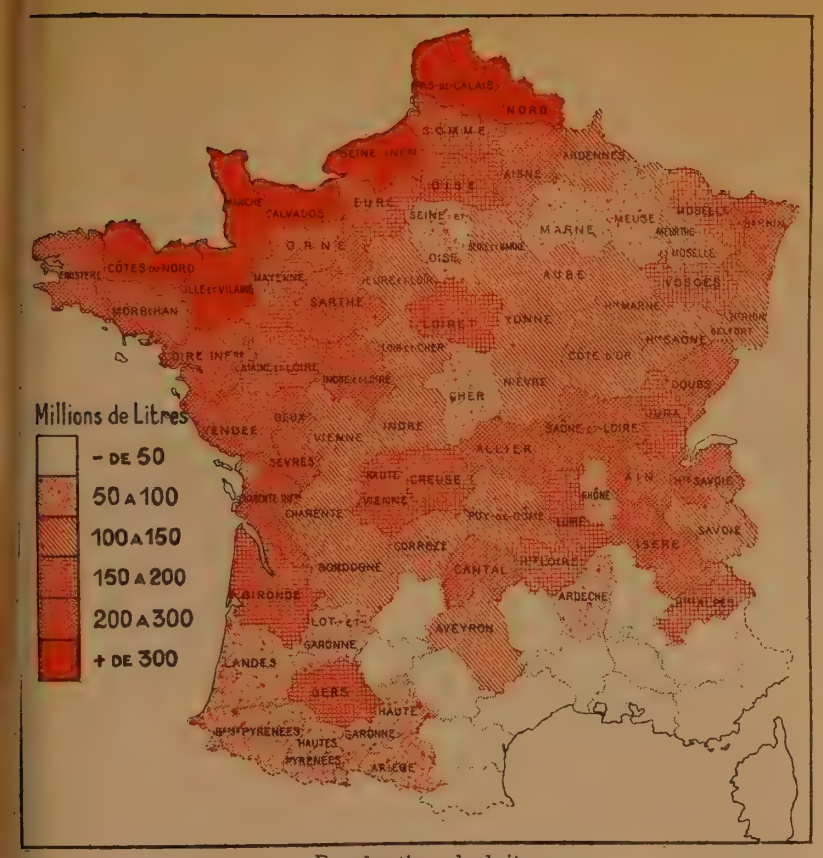
En 1929 on comptait qu'il existait dans le pays, 70 millions de poules, 30 millions de lapins, 8 millions de pigeons, 4.600.000 canards, 4 millions d'oies, 2.200.000 dindes.

La production d'œufs atteignait 5 milliards 276 millions, celle des volailles était de 500.000 tonnes et celle des lapins 240.000 tonnes.

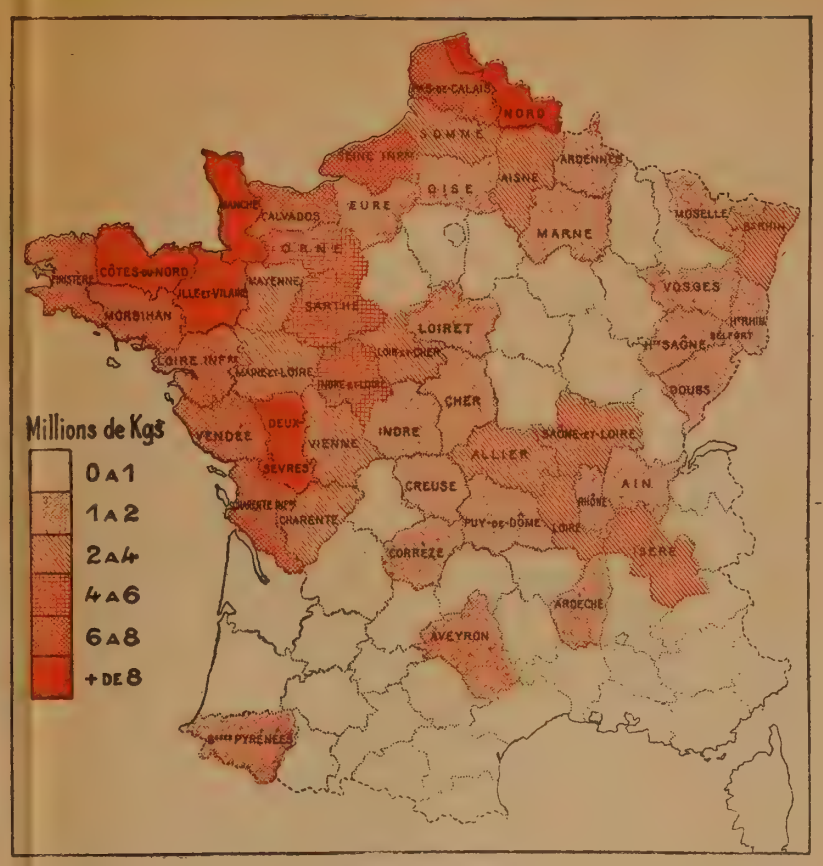


Carte générale de la productton avicole, départements et régions d'élevage.

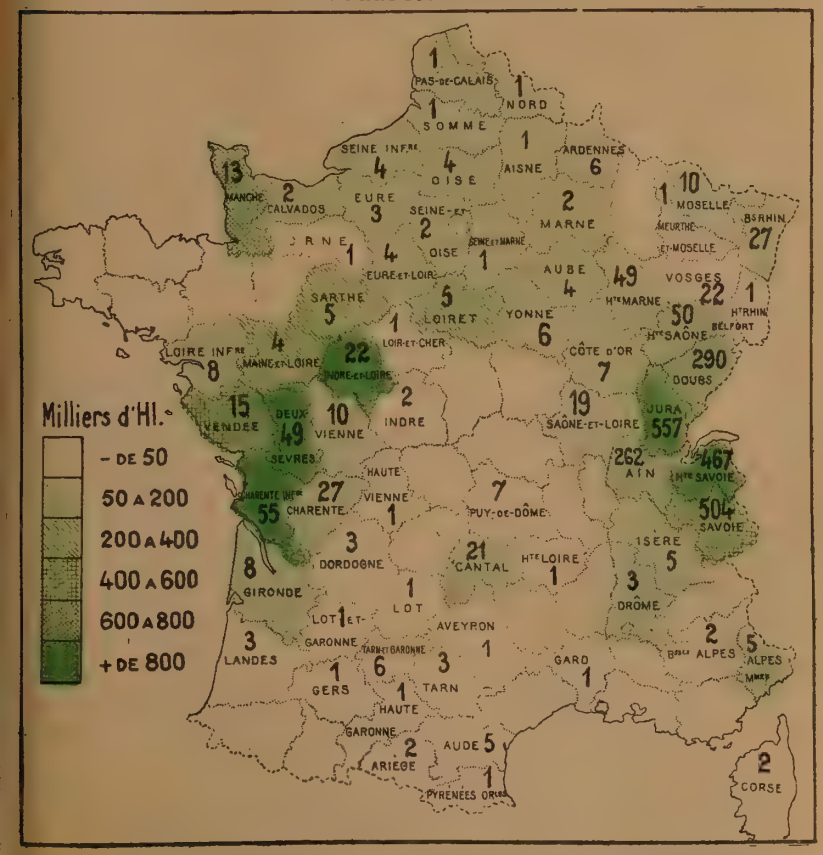
PRODUITS LAITIERS



Production du lait



Production du beurre



Coopératives laitières et quantités de lait qu'elles traitent

La production du lait intéresse en France 2.500.000 familles, soit près de la moitié de la population rurale. Son importance économique est sensiblement égale à celle du blé.

La production annuelle est de 140 millions d'hectolitres se répartissant :

Alimentation humaine	40 millions d'hect.			28,5 %
— des veaux.....	32	—	—	22,5 %
Fabrication du beurre	50	—	—	36 %
— du fromage.....	18	—	—	13 %
	140			100

Beurre. — La fabrication du beurre a lieu principalement dans les régions du littoral de la Manche et de l'Atlantique à climat doux et humide.

Fromages. — Exception faite de la Normandie, célèbre par ses camemberts, la fabrication du fromage est principalement réservée aux régions montagneuses à climat rude aux moyens de communication difficiles. Les Alpes et le Jura produisent le gruyère ; le Massif Central les fromages bleus.

Il existe en France 400 variétés différentes de fromages se divisant suivant le mode de fabrication, en fromages frais, fromage à pâte molle, à pâte sèche et fromages cuits.

Coopératives Laitières. — Le 1/6e de la production française de lait est traité en coopératives.

Les Coopératives du Bassin Parisien pratiquent surtout la vente du lait en nature. Celles des Charentes, du Poitou, de l'Anjou et de la Touraine, la fabrication du beurre ; celles de Savoie et du Jura, la fabrication du fromage.

CARTE DES FROMAGES

LE MINISTÈRE DE L'AGRICULTURE

78, RUE DE VARENNE - Tél. Invalides 50-20

Ministre de l'Agriculture : M. Georges MONNET. Chef de Cabinet : M. LYON.
Sous-Secrétaire d'Etat à l'Agriculture : M. LYAUTEY, Chef de Cabinet : M. GATHERON.

ORGANISATION ADMINISTRATIVE

Direction de l'Agriculture Directeur : M. BRASART	**Sous-Direction des Affaires Administratives :** M. HUGUET. 1er Bureau : Enseignement. 2e Bureau : Enseignement et Inspection Générale de l'Agriculture. Inspection Générale de l'Agriculture, 63, rue de Varenne. 3e Bureau : Encouragements à l'agriculture. **Sous-Direction des Affaires Economiques :** M. BILLET. 5e Bureau : Chambres d'Agriculture. 6e Bureau : Législation douanière et commerciale. Office de Renseignements Agricoles.
Direction des Eaux et du Génie Rural Directeur : M. PREAUD	1er Bureau : Entretien des cours d'eau non navigables et non flotables, protection contre les eaux nuisibles. Alimentation en eau potable. 2e Bureau : Canaux d'irrigation. Service hydraulique. Service de l'aménagement agricole des eaux. 3e Bureau : Service du Génie Rural. Personnel, enseignement, amélioration. 4e Bureau : Electrification des campagnes.
Direction générale des Eaux et Forêts Directeur Général : M. CHAPLAIN	Bureau du Personnel. 1er Bureau : Contentieux, législation, chasse, pêche, pisciculture. 2e Bureau : Aménagements et gestion. 3e Bureau : Reboisement, améliorations.
Direction des Haras Directeur : M. de SAINT-PALAIS	1er Bureau : Administration et personnel extérieur des Haras. 2e Bureau : Remonte des Haras. Encouragements, concours.
Direction du Secrétariat du Personnel Central et de la Comptabilité Directeur : M. CHAPISEAU	1er Bureau : Secrétariat personnel, bibliothèque, archives. 2e Bureau : Comptabilité générale. 3e Bureau : Calamités agricoles, assurances mutuelles. 4e Bureau : Mutualité agricole et législation rurale.

Service vétérinaire : M. BOUSSARD, 13, rue Casimir-Périer. Enseignement — Organisme consultatif et recherches — Services Sanitaires.

Service de la Répression des Fraudes : M. TOUBEAU, 42 bis, rue de Bourgogne.

Caisse Nationale de Crédit Agricole, Directeur Général : M. DESIGAUX, 5, rue Casimir-Périer.

LES CHAMBRES DÉPARTEMENTALES D'AGRICULTURE

Bien que déjà prévues par la loi du 20 mars 1851, les Chambres d'Agriculture ont été effectivement organisées par la loi du 3 janvier 1924 et les premières élections eurent lieu en février-mars 1927.

Elles sont composées de membres élus à raison de 4 par arrondissement au scrutin de liste par des personnes exerçant ou ayant exercé la profession agricole et des membres élus à raison de un par arrondissement par les associations et syndicats agricoles.

Les Chambres d'Agriculture sont des établissements publics qui ont leur siège au chef-lieu de chaque département. Elles sont, auprès des Pouvoirs Publics, les organes consultatifs et professionnels des intérêts agricoles de leur circonscription qui est le département. Outre leurs attributions consultatives, les Chambres d'Agriculture peuvent, dans leur circonscription, créer ou subventionner tous établissements, institutions ou service d'intérêt agricole, toutes entreprises collectives d'intérêt agricole.

L'ASSEMBLÉE PERMANENTE DES PRÉSIDENTS DES CHAMBRES D'AGRICULTURE

11 bis, rue Scribe. Opéra 59-90

L'Assemblée Permanente des Présidents des Chambres d'Agriculture a été instituée par un décret-loi du 30 octobre 1935. C'est un établissement public doué de la personnalité civile dans le cadre de la législation applicable aux Chambres Départementales d'Agriculture. Elle est auprès des pouvoirs publics l'organe consultatif et représentatif des intérêts généraux et spéciauxde l'Agriculture Métropolitaine. Elle est composée des Présidents des Chambres Départementales d'Agriculture suppléés par un délégué.

Le Président de cette Assemblée est M. Joseph FAURE, Sénateur, Président de la Chambre d'Agriculture de la Corrèze. Son Directeur est M. L. PRAULT, Ingénieur Agronome.

LE CENTRE RURAL

Le Centre Rural est la principale participation agricole à l'Exposition Internationale de Paris 1937.

Il a été édifié par le Comité de l'Agriculture, nommé par arrêté ministériel, avec le concours et la participation du Ministère de l'Agriculture, ainsi que du Ministère de l'Education Nationale pour les bâtiments scolaires, de la Ligue de l'Enseignement pour le foyer communal, du Ministère des P. T. T. pour les services postaux et téléphoniques.

Le Comité de l'Agriculture est placé sous la présidence de M. Joseph FAURE, Sénateur, Président de l'Assemblée Permanente des Présidents des Chambres d'Agriculture. Ses vice-présidents sont MM. PREAUD, Directeur des Eaux et du Génie Rural, BRASART, Directeur de l'Agriculture. Secrétaire M. MAITROT, Inspecteur Général du Génie Rural. Trésorier M. VIGNEROT, Ingénieur en chef du Génie Rural, DORIE, Secrétaire-rapporteur adjoint. Le Directeur du Comité est M. LECRONIER, Ingénieur Agricole.

Le Centre Rural est situé à l Annexe de la Porte Maillot (1). Il couvre près de 3 hectares. Il n'a pas pour objet la reconstitution intégrale d'un village. Les divers pavillons qui le composent choisis parmi les plus représentatifs de la vie professionnelle et sociale de l'Agriculture, constituent un cadre schématique pour la présentation du produit agricole et de la vie rurale dans leurs rapports avec les arts et la technique, thème général de l'Exposition de 1937.

A partir de l'entrée principale de la Porte Maillot, le Centre Rural présente aux visiteurs les bâtiments suivants :

Dans une première partie :

— Le Pavillon de l'Habitation Rurale Internationale érigé sous les auspices de la Société des Nations ;
— Le Pavillon de la Sériciculture ;
— Des parcs et des volières ;
— Une maison forestière ;
— Une galerie d'expositions animales ;
— Une documentation du Ministère de l'Agriculture ;
— Un Pavillon de l'Urbanisme : Les Temps Nouveaux.

Au Centre Rural proprement dit :

— Une meunerie-boulangerie-pâtisserie coopérative ;
— Une coopérative laitière ;
— Une exploitation agricole de moyenne culture ;
— L'habitation du fermier ;
— La maison de l'ouvrier rural ;
— Le centre de dégustation des vins, cidres, fromages et produits laitiers, fruits, etc... ;
— La coopérative fruitière ;
— La coopérative vinicole ;
— Un silo coopératif ;
— La mairie avec le musée du terroir et le cadastre ;
— La halle ;
— Les bâtiments scolaires et les services d'hygiène (bains-douches, dispensaire, etc...) ;
— Le foyer communal ;
— La maison des agriculteurs avec sa salle de cinéma ;
— L'Hôtel de la poste, son bureau de tabac-estaminet.

En outre, les productions agricoles infiniment variées et saisonnières sont présentées successivement au cours des semaines régionales qui renouvellent l'atmosphère du Centre Rural et l'animent périodiquement par des concours, des expositions, des congrès, des projections cinématographiques, des conférences, des fêtes paysannes, etc., destinés à mettre en valeur la production du sol et l'élevage des grandes régions françaises et à faire revivre leurs coutumes. (2)

---

(1) Moyens de communication avec la Porte Maillot :
Métropolitain : Station Porte Maillot, ligne Pont de Neuilly-Château de Vincennes.
Autobus : Station Porte Maillot, lignes AT bis, AD bis, C, EG, 73, 43, 38.

(2) Le calendrier de ces manifestations agricoles diverses est envoyé gratuitement sur simple demande adressée : Mairie du Centre Rural, Exposition 1937, Porte Maillot, Paris.

ÉDITÉ PAR
LE COMITÉ DE L'AGRICULTURE
11 bis, rue Sribe
PARIS (IXe)

Océa, PARIS

Environs of Versailles

With Director Demolon and Mr. Aubert I took an auto tour in the country about Versailles and Paris. I also made a visit by auto to Chateau Thierry, Reims, and Soisson. I saw many good examples of Gray-Brown Podzolic soils and areas of Rendzina. On the very sandy knolls, under a mixed forest, there were some fairly distinct Podzols, but these are unimportant. I saw some soils developed from cherty limestones, very much like the Fullerton of Tennessee, only more smooth in relief.

There are also many soils developed from loess and some of these tend toward the Brown Forest group.

There are some dairy cattle but not as many as would be expected in America near such a large city. Wheat is one of the main crops and is suffering considerably this year from a lack of rain. Also there are many fields of sugar beets. Especially near Reims there are many grapes, used particularly for making champagne. I visited one of the oldest and largest of these cellars. Most of the farmers live in villages, although there are many scattered farms, especially near Paris and west.

Figure 3.
Gray-Brown
Podzolic soil
near Trappes,
France.

Figure 4.
Profile of
Rendzina near
Grignon, France.
Upland B slope.
Much chert in the
surface. Shallow.
Medium dark gray.
Used largely for
potatoes.

Figure 5. Sandstone quarry near Versailles, on valley slope.

Figure 6. View near Chateaufort, France.

Figure 7. View near Chateaufort, France (near Paris)

Figure 8. View near Chateaufort, France
(near Paris)

Figure 9. View near Chateaufort, France
(Near Paris)

Figure 10. Landscape near Grignon, France, just west of the village of Petite Pres. Rendzina in foreground (Profile in Figure 4.)

Figure 11. Farm near St. Germain, France. (Gray-Brown Podzolic soil)

Figure 12. View in the park at St. Germain.

Figure 13. View in the park at St. Germain.

Figure 14. View in the park at St. Germain

Figure 15. Paris from St. Germain. The Seine River in middle.

Figure 16. Farm east of Paris.

Figure 17. View of Chateau Thiery
from American monument.

Figure 18. American cemetery near Belleau Woods.

Figure 19. American cemetery near Belleau Woods.

Figure 20. German gun in Belleau Woods. Note where American shell made direct hit on the muzzle.

Figure 21. Street in Meaux, France

Figure 22.
Cathedral
at Rheims.

Figure 23.
Cathedral
at Rheims.

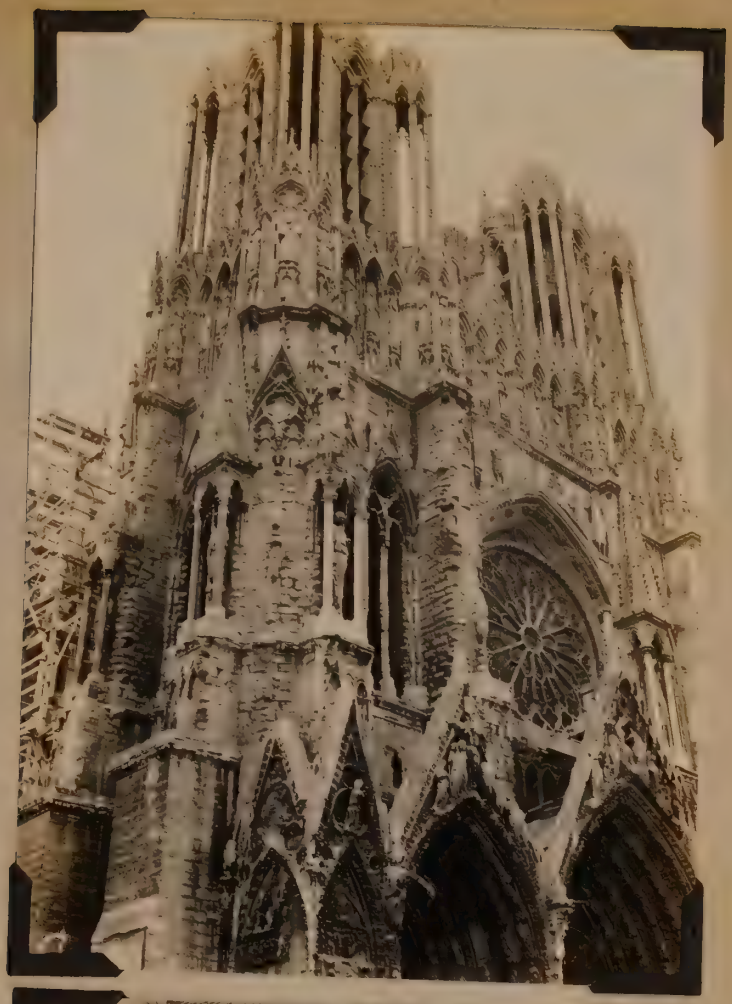


Figure 24.
Cathedral at
Rheims.

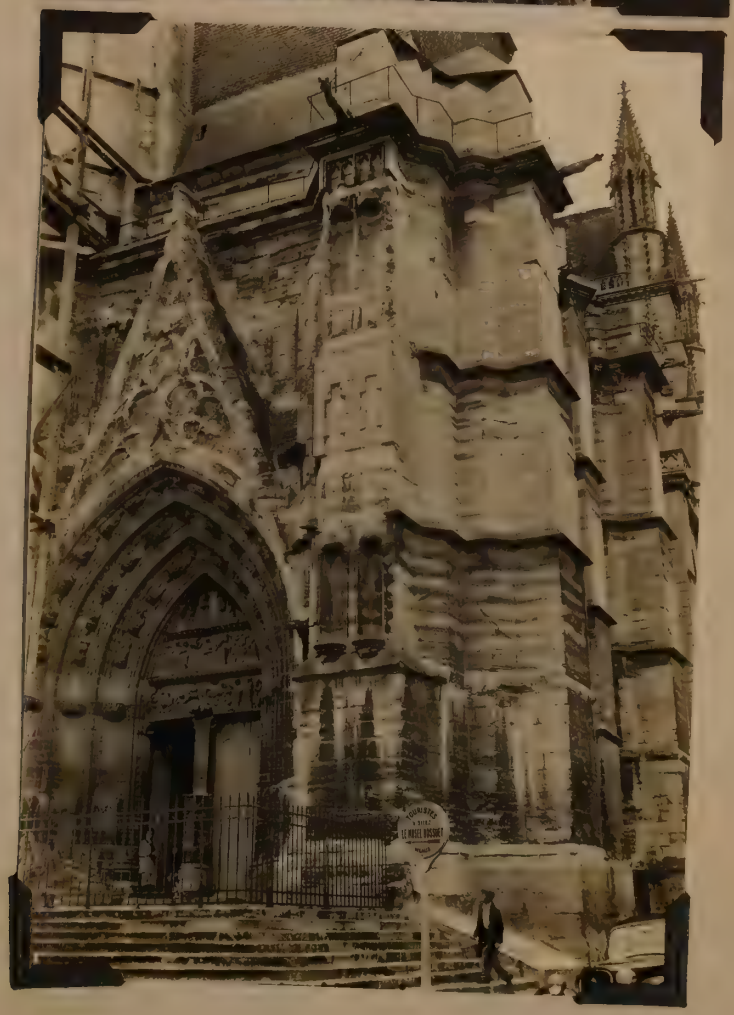


Figure 25.
Cathedral
at Meaux.

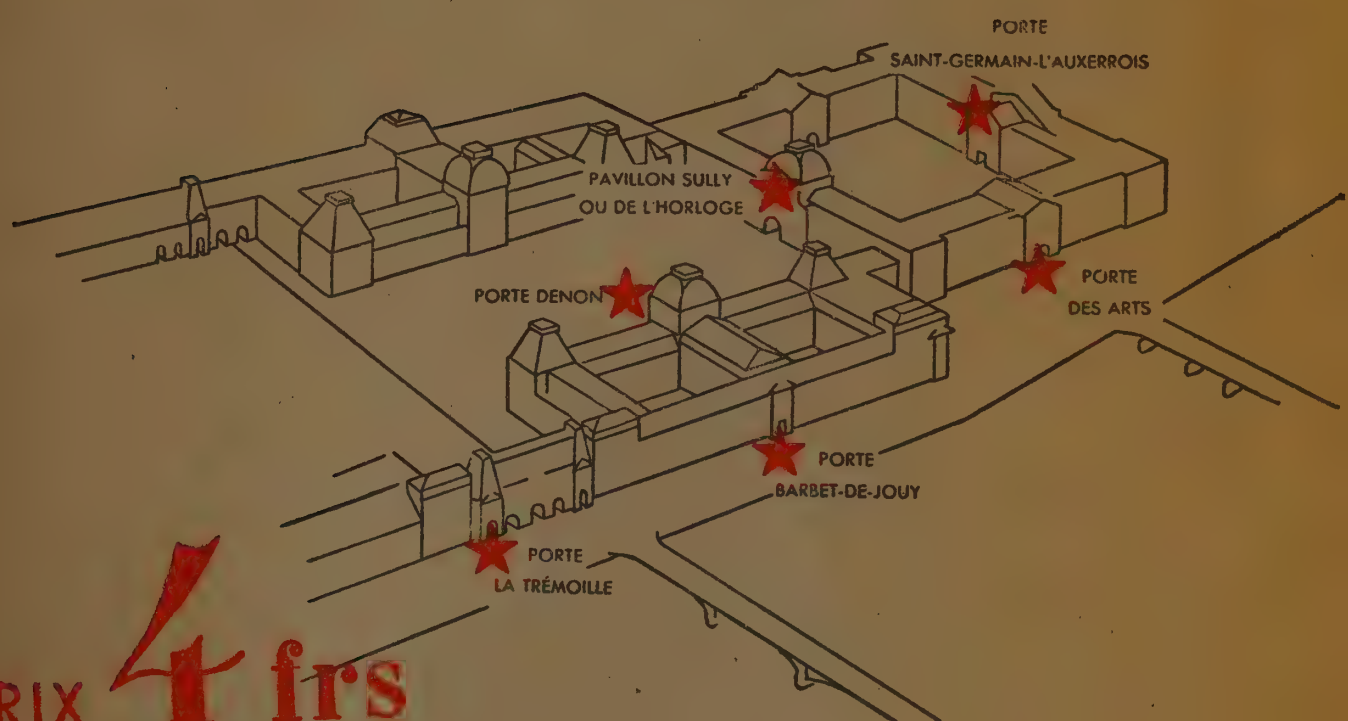
-32-

55e MILLE

LE GUIDE PAR L'IMAGE

LE MUSÉE DU LOUVRE

PRÉSENTÉ PAR SES CONSERVATEURS



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" LE GUIDE PAR L'IMAGE "

LE MUSÉE DU LOUVRE

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dans les VILLES D'ART, MUSÉES,
MONUMENTS HISTORIQUES

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Dans la même Collection :

VERSAILLES Le Château - Le Parc - Les Trianons - La Ville. 5 plans - 150 illustrations.	par M. Ch. MAURICHEAU-BEAUPRÉ, Conservateur-Adjoint du Musée de Versailles.
FONTAINEBLEAU Le Palais - La Ville - La Forêt. 100 illustrations.	par M. MORIN-JEAN, Conservateur-Adjoint du Musée de Fontainebleau.
SAINT-GERMAIN-EN-LAYE Le Château - La Terrasse - La Ville - La Forêt. 90 illustrations.	par M. Raymond LANTIER, Conservateur du Musée des Antiquités Nationales
MALMAISON 60 illustrations.	par M. Jean BOURGUIGNON, Conservateur des Musées napoléoniens.
LE MONT-SAINT-MICHEL " La Merveille de l'Occident ". 100 illustrations.	par M. Germain BAZIN, Conservateur-Adjoint des Musées Nationaux.

Textes anglais :

THE LOUVRE MUSEUM VERSAILLES	presented by its Curators. by Ch. MAURICHEAU-BEAUPRE, Assistant-Curator of the Museum.

Les brochures parues de la Collection des *GUIDES PAR L'IMAGE* se trouvent à la Salle d'Exposition et de Vente du Musée du Louvre (Salle du Manège, Porte Denon) et aux Comptoirs de Vente des autres Musées Nationaux

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" LE GUIDE PAR L'IMAGE "

Les Musées sont aujourd'hui si nombreux, si riches, si complexes et certains d'entre eux si spécialisés, que le public ne saurait plus s'abandonner au plaisir de l'art ou de l'évocation historique, ni surtout s'y consacrer avec quelque profit, sans avoir fait un effort de préparation.

A vrai dire, les Musées se transforment : ce ne sont plus « les cimetières de l'art ». A côté des documents classés avec méthode à l'intention des étudiants et des chercheurs, la présentation rationnelle et vivante des chefs-d'œuvre et des œuvres typiques doit retenir et émouvoir le public.

Mais une telle réforme ne suffit pas puisqu'on voit à la porte tant de visiteurs acheter en entrant soit un catalogue, soit l'ouvrage d'un bon historien, soit un guide édité pour les touristes, soit un billet d'admission à une conférence ou à une visite-guidée, et emporter ensuite des reproductions de toutes sortes.

Aussi je regrettais, depuis longtemps, professionnellement pour les autres et égoïstement pour moi-même, l'absence à l'entrée de chaque Musée ou Monument d'un petit ouvrage que je rêvais ainsi : il serait d'un prix modique, si modique que les moindres touristes pourraient l'acheter et en acheter la série complète, facile à conserver ; il serait rédigé par l'un des hommes qui connaissent et aiment le mieux chaque collection ou édifice et qui dirait précisément et sans froideur ce qui peut gagner l'esprit en touchant la sensibilité ; chacun de ces manuels comporterait des plans itinéraires mobiles, correspondant bien au texte, qui serviraient de « carte routière » pour le parcours sommaire aussi bien que de « fil conducteur » pour la visite choisie ; enfin et surtout je voulais que ce guide pratique pour tous, composé et écrit par un savant artiste, servît, autant que cela est réalisable avec des moyens matériels modestes, à initier le visiteur novice à l'art de regarder les œuvres d'art ; pour cela il faudrait, « mises en pages » tout près du commentaire, des reproductions suffisantes afin de permettre de deviner l'œuvre avant de la connaître, puis de l'évoquer pour la mieux revoir ; assez nombreuses aussi pour former à elles seules un résumé significatif de l'évolution d'un art ou d'une époque ; choisies enfin pour inciter le visiteur à découvrir dans un minuscule cliché ce qu'il a négligé ou omis, et ainsi à façonner son goût en l'obligeant à comparer ce qu'il a aimé sans peine à ce qu'il se croyait incapable d'aimer.

Or, un éditeur s'est trouvé, assez prudent pour établir une brochure à si petit prix, assez hardi pour tenter l'expérience d'une collection conforme à mes exigences. Mes collaborateurs se sont cordialement associés à moi pour contribuer à la qualité de cette tentative de propagande. Voici les premiers de ces *" Guides par l'Image "*, analogues à une Encyclopédie du même nom : ils sont consacrés au *Louvre*, à *Fontainebleau*, à *Versailles*, au *Mont-Saint-Michel*, à *Malmaison*. D'autres paraîtront bientôt, si le public nous sait gré de lui offrir un moyen commode de se donner à lui-même plus complètement un des plus rares plaisirs de l'esprit et de la sensibilité.

Henri Verne

Directeur des Musées Nationaux
et de l'Ecole du Louvre.

LE MUSÉE DU LOUVRE

ENTREE : en semaine **3** *francs, gratuite le dimanche.*

● **EST OUVERT** *tous les jours, sauf le lundi :*
de 10 heures à 17 heures, du 1er avril au 30 septembre,
de 10 heures à 16 heures, du 1er octobre au 31 mars.

● **EST FERMÉ** *tous les lundis — et aussi :*
le 1er janvier, le jour de l'Ascension, le 14 juillet,
le 15 août (Assomption) à moins que cette fête ne tombe un dimanche,
le 1er et le 11 novembre (Armistice),
le 25 décembre, quel que soit le jour de la semaine,
le 2e mardi après Pâques, le 2e mardi après la Pentecôte.

LES GROUPES SCOLAIRES sous la conduite d'un maître sont admis gratuitement les jours d'ouverture du Musée.

LES ENFANTS au-dessous de 16 ans sont admis gratuitement le jeudi après-midi avec la personne qui les accompagne.

LES VISITES-CONFÉRENCES ont lieu le lundi. L'entrée du Musée est réservée aux auditeurs munis d'un ticket spécial.

◆ **TÉLÉPHONES** Pour l'ensemble du Musée : **Opéra 82-10** (3 lignes). Une cabine téléphonique est à la disposition du public dans la **Salle du Manège.**

◆ **ASCENSEURS** **Pavillon de l'Horloge**, conduisant : 1er étage, Salles du Mobilier.
2e étage, Peintures du XIXe siècle.
— Collection Delort de Gléon.
— Musée de la Marine.
Pavillon Mollien, conduisant : 1er étage, Galeries de Peintures.
2e étage, Collection Camondo.

◆ **LAVABOS** **Salle du Manège** (Porte Barbet de Jouy).
Galerie des Primitifs français (vers le milieu de la Grande Galerie).

LE MUSÉE DU SOIR

Le réaménagement en cours de l'ensemble du Musée du Louvre a déjà permis d'éclairer à l'électricité les salles des sculptures grecques et des sculptures égyptiennes, qui sont définitivement installées.

Ces salles sont provisoirement ouvertes **tous les mercredis et samedis** de 21 heures à 23 heures.

Elles sont, en outre, ouvertes, en hiver, **tous les dimanches et tous les jeudis,** de 17 heures à 19 heures (droit d'entrée : 3 francs).

Prochainement trois autres Départements du Musée du Louvre seront à leur tour définitivement réaménagés, et pourront être ouverts, le soir, par roulement.

ÉCOLE DU LOUVRE

Porte Visconti — 34, quai du Louvre

L'École du Louvre a pour objet l'enseignement de l'archéologie et de l'histoire de l'art.

Les cours peuvent être suivis, sans distinction de nationalité, par des élèves astreints à se présenter aux examens, et par des auditeurs libres.

La durée des études est de trois ans.

Le droit annuel d'inscription est de 160 francs.

Les inscriptions sont reçues pendant le mois d'octobre et, éventuellement, toute l'année.

S'adresser au Secrétariat de l'École : 34, quai du Louvre. *Tél. OPÉRA 82-10.*

SALLE D'EXPOSITION ET DE VENTE

Vestibule public mettant en communication les portes Denon et Barbet de Jouy dans l'**ANCIEN MANÈGE** du Prince Impérial.

Tél. OPÉRA 82-10.

Vente des catalogues, publications, photographies, cartes postales.

VOUS Y TROUVEREZ :

DES OBJETS D'ART pour décorer votre intérieur avec goût.

DES DOCUMENTS pour vous perfectionner dans l'étude de l'art.

Gravures originales d'après les œuvres des Maîtres.

Moulages et bronzes d'après les chefs-d'œuvre du Musée.

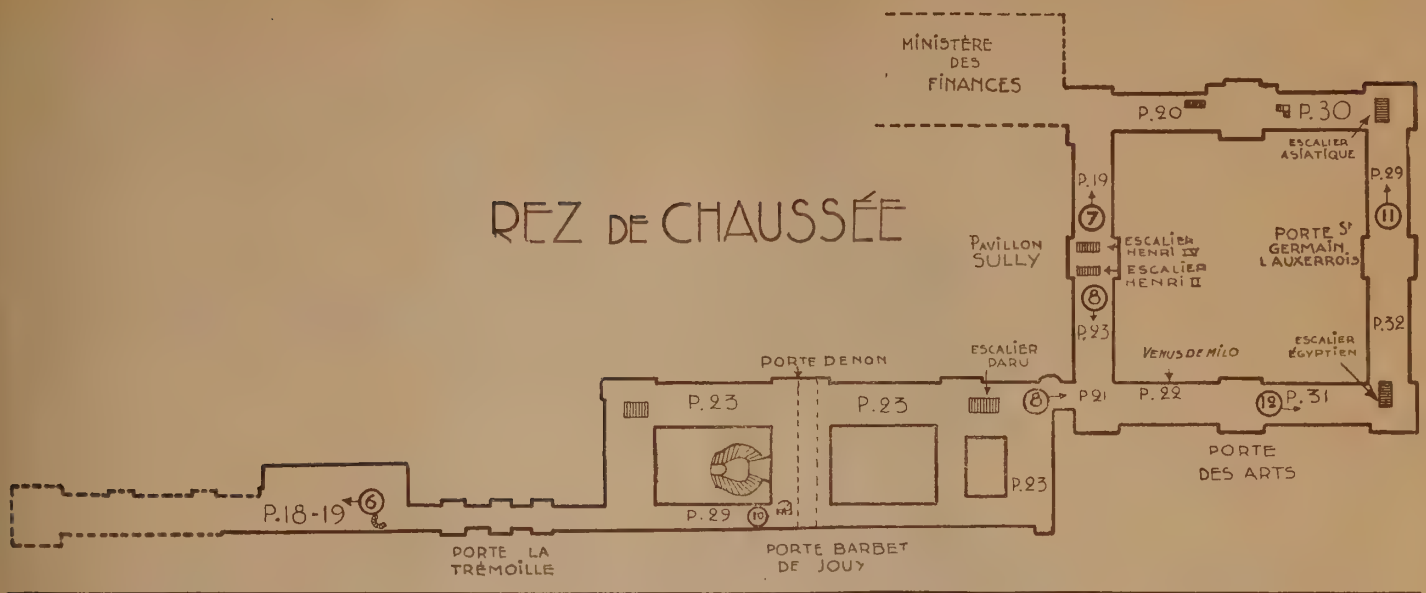
Ouvrages d'histoire et de technique des Beaux-Arts.

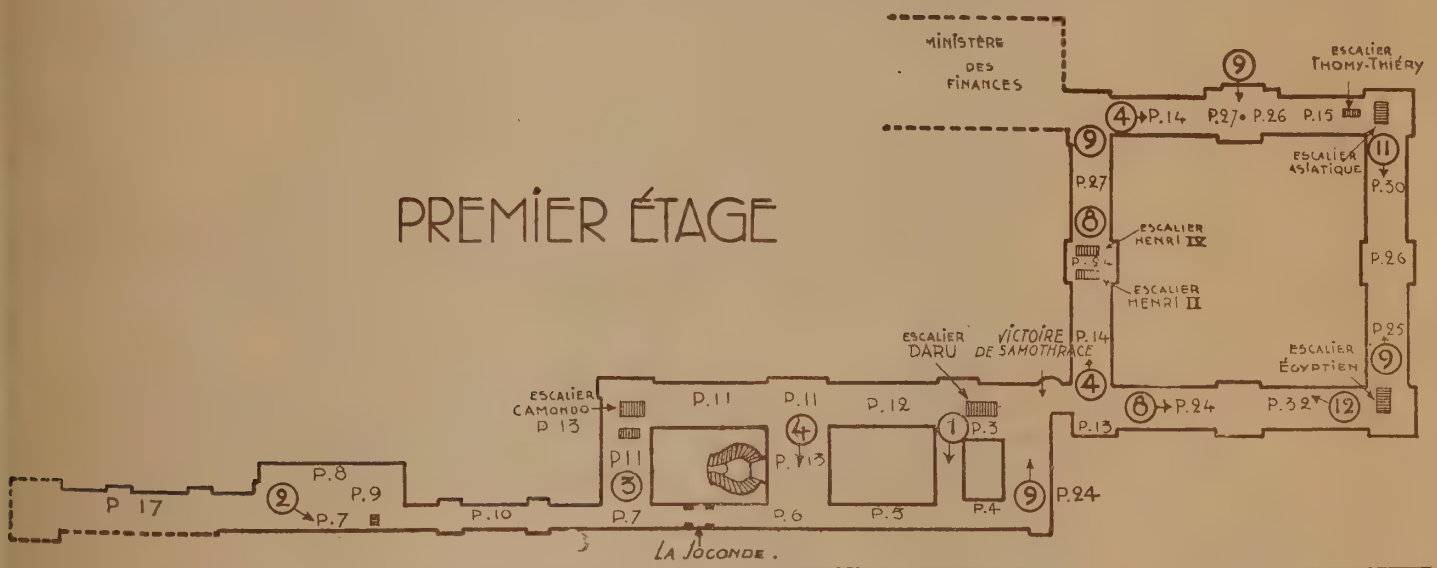
Liste complète des catalogues et guides officiels du Musée.

La **Salle du Manège** est ouverte en permanence, dimanches compris, pendant les heures d'ouverture du Musée.
La Collection complète des « **GUIDES PAR L'IMAGE** » parus est en vente à la **Salle du Manège.**

LE MUSÉE DU LOUVRE

PLANS D'ENSEMBLE PAR ÉTAGES



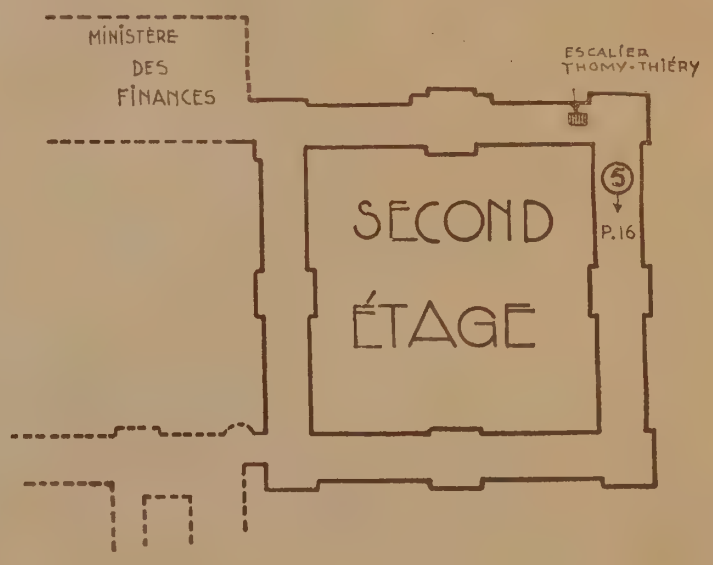


Les chiffres entourés d'un cercle indiquent les numéros des itinéraires commentés. Le même chiffre encerclé se retrouve, dans la brochure, au début de chaque chapitre formant itinéraire.

Ces chiffres encerclés sont situés, sur les plans, à l'emplacement occupé dans le Musée par les départements auxquels se réfèrent les itinéraires commentés.

Les flèches indiquent la direction à prendre, au départ de chaque itinéraire, pour suivre les commentaires de la visite.

Les autres chiffres indiquent les pages du " Guide ". Ils sont également situés à l'emplacement des salles dont le visiteur trouvera le commentaire à la page indiquée.



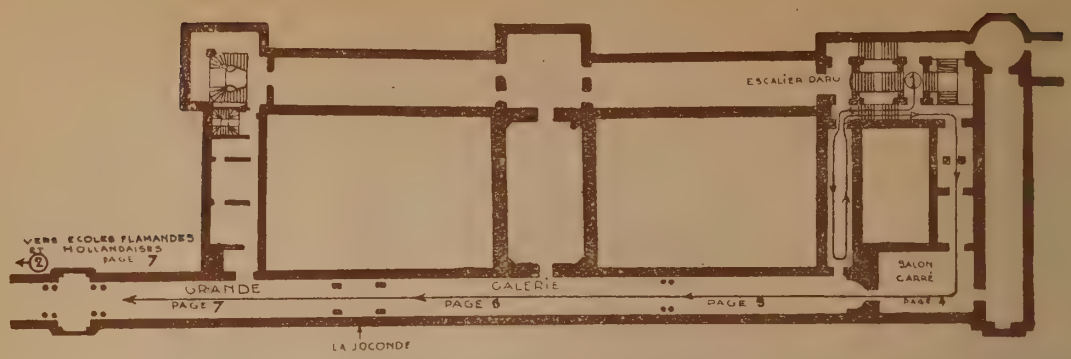
PLAN DÉTAILLÉ DE CHAQUE ITINÉRAIRE

ITINÉRAIRE 1

PEINTURES
École italienne

Page 3

PREMIER ÉTAGE

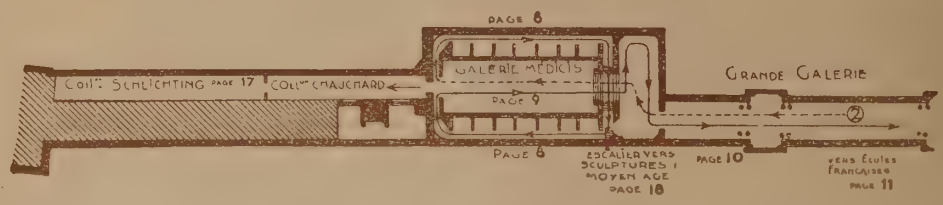


ITINÉRAIRE 2

PEINTURES
Écoles flamande et hollandaise

page 7

PREMIER ÉTAGE



ITINÉRAIRE 3

PEINTURES
École française

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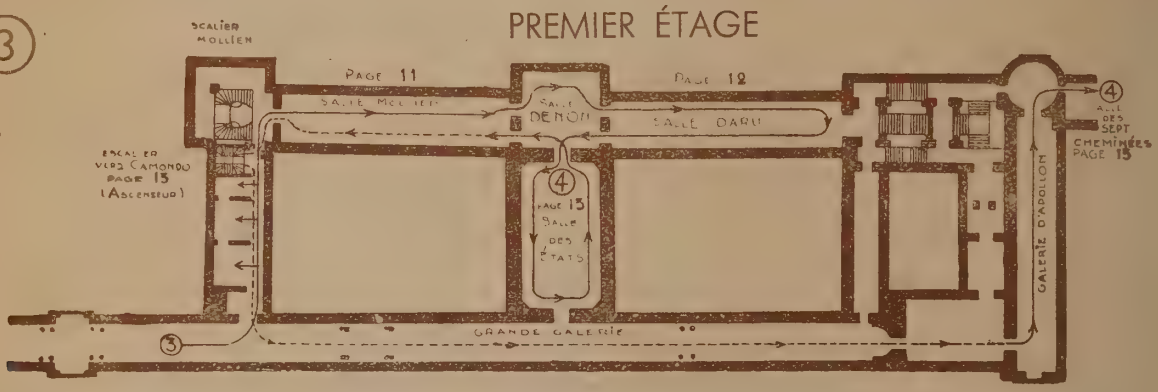
PREMIER ÉTAGE



L'itinéraire de chaque visite est indiqué, sur chaque plan, par un trait à suivre dans le sens des flèches. Le texte ci-joint suit rigoureusement ces itinéraires.

Le départ de chaque itinéraire est indiqué par l'emplacement du numéro de cet itinéraire entouré d'un cercle.

Les lignes pointillées sont une indication : ou bien que les salles où figure ce pointillé ont été déjà traversées par le visiteur ; ou bien que le commentaire qui les concerne sera donné à un autre moment de la visite. Le commentaire se continue à la reprise du trait plein.

L'itinéraire [5] (Peintures des Temps Modernes), n'a pas nécessité de plan, les salles à visiter formant une suite continue au Second Etage sur la Cour Carrée. Le visiteur y accédera facilement par l'Escalier Thomy-Thiéry, ou par l'ascenseur de l'Escalier Henri II.

De même pour l'itinéraire [10] (Arts de l'Asie). Les salles contenant ces collections sont accessibles suivant les indications données en tête de cet itinéraire (page 28).

PREMIER ÉTAGE

ITINÉRAIRE 4

PEINTURES
École française

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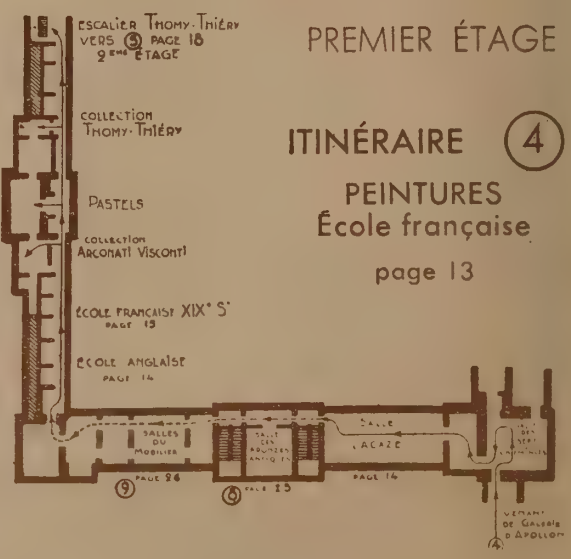
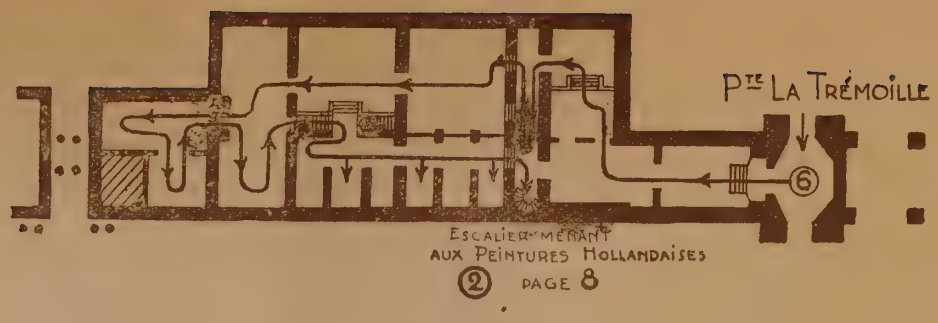


ITINÉRAIRES 6 ET 7

SCULPTURES
Moyen Age, Renaissance
et Temps Modernes

pages 18 et 20



ITINÉRAIRE 8

ANTIQUITÉS GRECQUES
ET ROMAINES

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REZ-DE-CHAUSSÉE

COUR CARRÉE

Salle des Cariatides

Diane de Versailles

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Vénus de Milo

Galerie Daru

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Vers 1er étage

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Cour du Sphinx

La Suppliante

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PREMIER ÉTAGE

ITINÉRAIRE 8 Suite

ANTIQUITÉS GRECQUES
ET ROMAINES

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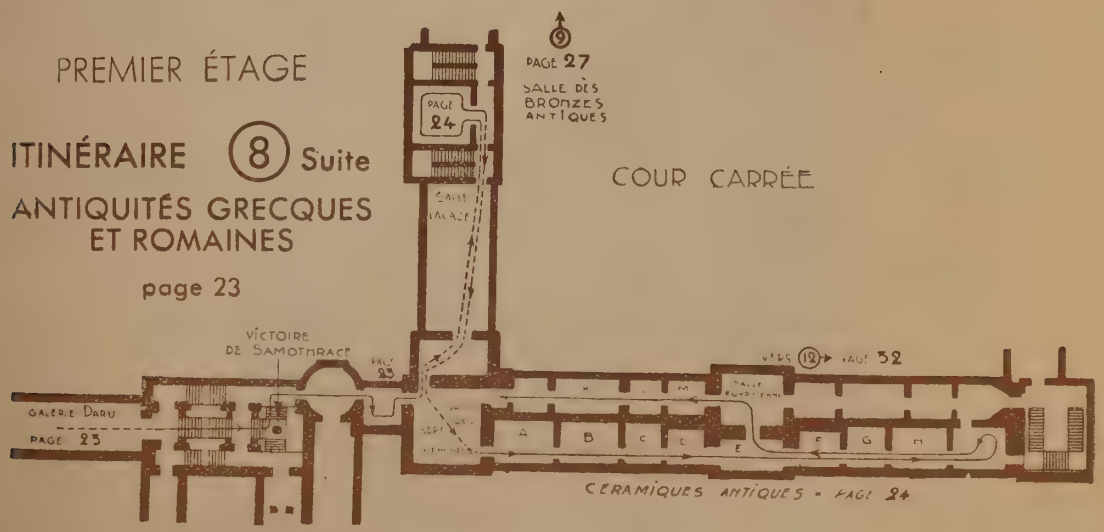

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OBJETS D'ART

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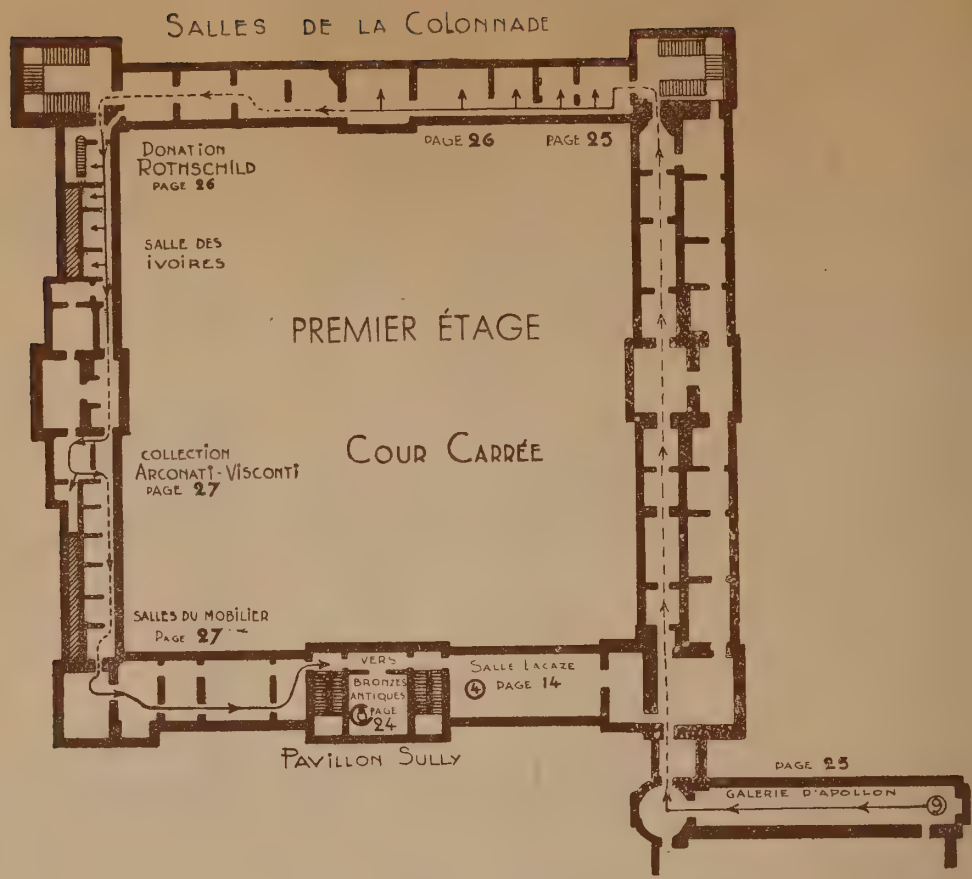

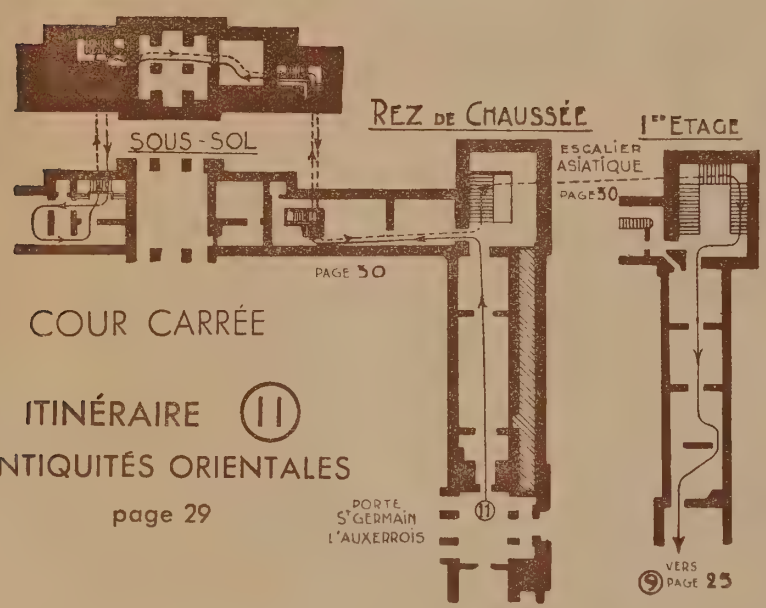

ITINÉRAIRE (11)

ANTIQUITÉS ORIENTALES

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ITINÉRAIRE (12)

ANTIQUITÉS ÉGYPTIENNES

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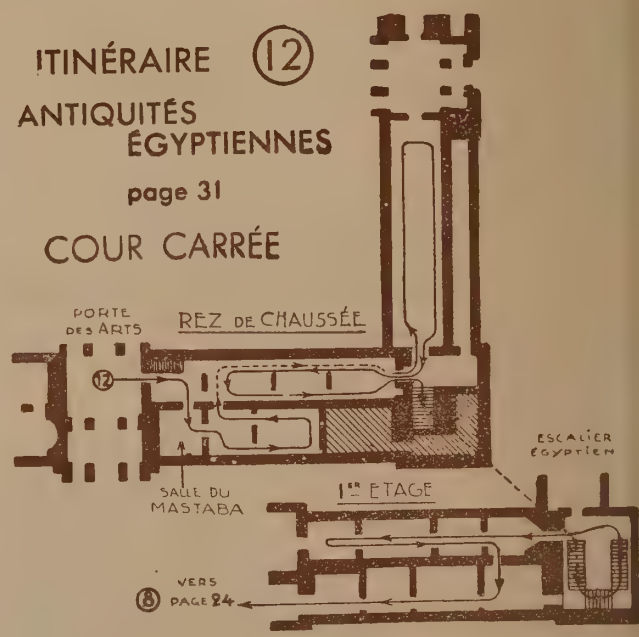


LA VISITE DU LOUVRE

Passer deux heures au Louvre pour connaître certaines œuvres célèbres est une noble curiosité. Y venir souvent faire sa visite amicale à telle image préférée est un des plus vifs plaisirs de l'esprit. Mais le visiter avec méthode réserve une tout autre satisfaction à qui voudra s'y essayer.

Le Louvre est le musée encyclopédique conçu par l'esprit du XVIIIe siècle, formé des collections de nos rois, complété par les amateurs et les savants du XIXe et du XXe siècle. Il est un répertoire d'œuvres humaines de tous les genres, de presque tous les temps et, en raison de son universalité même, il est fait plus que tout autre pour le public. Le reclassement méthodique des collections, la présentation nouvelle des œuvres, nous les avons entrepris précisément pour accroître, au moins autant que la valeur scientifique, l'influence éducative du ***Museum Central des Arts***. Et ce petit guide est destiné à rendre plus efficace cette influence.

Nous avons tenté, en effet, d'offrir aux lecteurs encore mal documentés, un aspect exact bien que sommaire de notre grand musée. Chacun des sept départements occupe ici une place qui ne correspond peut-être pas à son importance réelle, mais qui doit suffire pour éveiller l'intérêt. De même les illustrations sont nombreuses, et, par suite, de petites dimensions, car on a reproduit, en outre des œuvres fameuses, le plus possible de celles dont le texte conseille l'étude. Ce texte engagera, je l'espère, un grand nombre de personnes, à parcourir le Louvre tout entier. Sept ou huit visites attentives y suffiront. Mais il est nécessaire de s'être donné cette vue d'ensemble, autant qu'il est indispensable d'avoir lu une histoire de la civilisation et une histoire de la littérature. Cette vaste leçon de choses passées s'impose d'autant plus à nous que l'enseignement de l'histoire de l'art n'est pas organisé depuis longtemps et que la plupart d'entre nous n'ont pas appris à regarder les œuvres d'art avec des yeux sincères et un jugement personnel. Sans nous en douter, nous les voyons à travers des habitudes et nous y cherchons surtout la ressemblances avec ce que nous aimons déjà. Seule l'étude, même sommaire, d'un Louvre peut rééduquer notre vision en accrochant, presque malgré nous, parmi nos souvenirs quelques images très diverses, contradictoires à notre avis puisqu'elles ont été choisies par d'autres, mais qui précisément ne se seront pas toutes effacées de notre esprit quand il retrouvera ses préférences casanières. Alors la comparaison nous conduira peu à peu à nous attacher moins à l'anecdote sinon au sujet ; nous ne cèderons pas plus qu'il ne faut à l'agrément des belles matières ou au mystère des techniques. Ce sont là des moyens de « bien écrire », et l'art est au-delà. Il est dans le choix que la sincérité d'un véritable artiste a pu inspirer à son talent. Et précisément le plaisir de l'art est de sortir de soi-même pour entrer dans la sensibilité supérieure ou très particulière d'un créateur.

Mais notre sensibilité ne s'éveille et ne reste vive que si elle est sans cesse exercée. Mettons-nous donc souvent en présence de belles œuvres originales. Certaines sont « isotoniques » à notre nature ; essayons de nous plaire à d'autres. Lorsque nous serons capables de cet effort, nous serons sur le point de distinguer des habiles, les vrais artistes. Nous aurons acquis une faculté visuelle et une émotivité dont s'enchantera même notre vie quotidienne car le goût est la bonne éducation de la sensibilité.

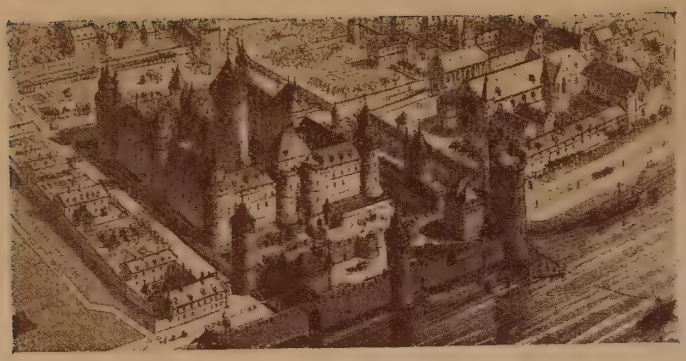
Ainsi préparés, nous nous complairons à commenter nos plaisirs d'art ; à chercher l'application des principes de l'esthétique ; à mesurer l'instable équilibre du réalisme et de l'idéalisme ; à calculer les rythmes de la composition ou les rapports des tons ; à découvrir les touchantes origines ; à apprécier enfin les échanges d'influences qui abaissent les imitateurs et élèvent les maîtres. A ce moment notre raison, au moins autant qu'elle l'a fait aux lettres ou à l'histoire, en se vouant au culte des arts, aura assoupli sa sagesse. Elle y aura gagné de juger plus finement, dans le passé et dans le présent, ce que l'esprit doit aux grandes personnalités qui, elles-mêmes, doivent tant aux échanges entre les hommes et les peuples.

Le langage des couleurs et des formes, le plus ancien de nos moyens d'expression, l'un des plus universels aussi puisqu'il est pratiqué et peut-être entendu dans tous les pays, nous apporte les leçons d'un humanisme nouveau. Et c'est à l'appel de cet humanisme que chacun se doit de visiter le Louvre.

Leonard de Vinci. — La Joconde

Portrait de Monna Lisa, femme de Francesco del Giocondo, commencé par Léonard à Florence vers 1500, apporté par lui en France en 1516, acheté au peintre par François Ier au prix de 12.000 livres.

Henri VERNE,
Directeur des Musées Nationaux et de l'Ecole du Louvre.



Le Louvre féodal

Le Louvre des Valois (à droite la Tour de Nesle) Photo Hachette

HISTOIRE BRÈVE DU PALAIS DU LOUVRE

Le Louvre n'est Musée que depuis la Révolution.

A l'origine ce fut un ouvrage fortifié qui flanquait et renforçait vers l'ouest l'enceinte de la ville élevée par Philippe-Auguste à la fin du XIIe siècle. La " Tour du Louvre " devint alors le symbole du régime féodal, la figuration du pouvoir du roi en tant que suzerain. C'est devant elle que les vassaux étaient censés rendre l'hommage. La fameuse Tour de Londres qui, elle, a subsisté, peut donner une idée de ce qu'était la Tour de Paris, forteresse et prison.

Au XIVe siècle Charles V, conservant l'ouvrage de Philippe-Auguste comme donjon, construit autour un « château » qui sera, pour lui, lieu de retraite et de repos. Dans le pavé de la Cour Carrée, on retrouve, tracé en lignes blanches, le dessin du Louvre de Philippe-Auguste, et, tracé en lignes noires, celui du Louvre de Charles V.

Après la guerre de Cent ans, les rois résident de préférence à Bourges ou à Chinon, à Tours, à Amboise ou à Blois. C'est François Ier qui ramène la Cour à Paris et, tout aussitôt, il pense à réédifier le Louvre. Il fait choix d'un architecte, Pierre Lescot, et arrête avec lui le plan d'un « grand corps d'hôtel » affecté à « logis de plaisance » selon le goût nouveau, le style importé d'Italie. François Ier ne verra pas s'épanouir le gracieux palais des bords de la Seine. Mais Henri II confirme Pierre Lescot dans sa charge. En 1548, la façade actuelle sur la Cour Carrée est achevée. En 1549, la Salle des Caryatides, l'escalier Henri II sont aménagés et Jean Goujon exécute la décoration des œils-de-bœuf sur la Cour. L'année suivante il s'engage pour les quatre Caryatides de la Salle qui va prendre leur nom. De 1550 à 1558, les deux maîtres donnent aux pièces intérieures leur décoration. Ce nouveau Louvre marque l'avénement à Paris du style dit Renaissance, qui déjà triomphait aux bords de la Loire.

Pendant ces travaux, la Cour résidait, vers l'Est, à l'Hôtel des Tournelles. C'est à l'Hôtel des Tournelles que fut mortellement blessé Henri II au cours d'un tournoi. Catherine de Médicis n'attendit pas que le nouveau palais fût achevé ; le soir même du tragique accident, elle se réfugiait au Louvre avec ses enfants. De ce jour, les destinées de Paris étaient marquées : son évolution se fera dorénavant vers l'ouest.

Le Louvre des Valois possède deux ailes neuves : aile Ouest, aile Sud, et deux ailes du Moyen-Age. C'est seulement sous Louis XIII que disparaît l'aile Nord, et sous Louis XIV qu'est abattue l'aile Est. L'achèvement de la Cour Carrée (1664) est l'œuvre de Le Vau, qui s'en tient toujours, d'ailleurs, au plan de Pierre Lescot.

Surgit alors la querelle de la Colonnade. On voulait pour le palais royal une entrée solennelle et grandiose. L'architecte italien Bernin, auteur de la Colonnade de Saint-Pierre de Rome, suggéra l'idée d'une Colonnade à la romaine. L'opinion fut séduite et Claude Perrault, le frère de l'auteur des « Contes », donna le dessin de la façade qui regarde vers Saint-Germain-l'Auxerrois. Mais cette façade n'était ni dans l'esprit ni à l'échelle du Louvre de la Renaissance : elle en bouleversait l'économie. Pendant tout le XVIIIe siècle on se demandera si la loi de la Colonnade l'emporterait sur celle du Louvre de Lescot, ou si la Colonnade serait adaptée au style de la Renaissance. C'est Napoléon qui a tranché la question. Dans la Cour Carrée trois ailes ont été mises au niveau de la Colonnade, couvertes de toits plats et bordées de balustres. La quatrième, l'aile Ouest, a seule été conservée comme témoin du style Renaissance.

Les appartements du roi correspondaient à la Salle des Caryatides où était le trône ; à la salle qui se trouve dessus, Salle La Caze aujourd'hui (alors Salle des Gardes) ; à la Salle David qui était l'antichambre : au

Photo Hachette Chambre de Louis XIV

La Colonnade de Perrault en construction

Photos : Arch. Photogr. d'Art et d'Histoire - Paris

L'Académie Française au Louvre

Le défilé du mariage de Napoléon Ier dans la Grande Galerie

Salon des Sept Cheminées, où se succédaient la Chambre de parade et la Chambre à coucher. La reine occupait les pièces qui, au premier étage, font suite au Salon des Sept Cheminées, vers l'Est (Musée Charles X, Salle des Antiquités céramiques). Les reines-mères, Catherine de Médicis, Marie de Médicis, Anne d'Autriche, habitaient au rez-de-chaussée, en bordure de la Cour Carrée, sous l'appartement des jeunes reines : c'était leur appartement d'hiver ; et, en bordure du jardin de l'Infante, sous la Galerie d'Apollon : c'était leur appartement d'été.

Rien ne subsiste de la décoration ancienne si ce n'est le plafond de l'antichambre du roi, qui est de la Renaissance, ceux de l'appartement d'été des reines-mères qui furent peints à fresque par Romanelli pour Anne d'Autriche, et le Cabinet de Louis XIV, Salle des Bijoux Antiques. Les deux chambres royales n'ont pourtant pas disparu ; elles ont été reconstituées dans la Colonnade : c'est là qu'il faut les aller voir.

Pendant que se construisait le Louvre, pour le roi, Catherine de Médicis se faisait bâtir, pour elle, le palais des Tuileries. Henri IV eut l'idée de réunir par une galerie, la Galerie du bord de l'eau, les deux palais. Mais l'ensemble Louvre-Tuileries ne devait être achevé que trois cents ans plus tard par Napoléon III. Les parties anciennes subirent elles-mêmes un remaniement. Les architectes Visconti et Lefuel y apportèrent, vraisemblablement sous l'influence de l'Impératrice Eugénie, une surcharge décorative que notre époque apprécie moins.

Le Louvre demeura palais royal jusqu'en 1666, date de la mort d'Anne d'Autriche. Après la mort de sa mère, Louis XIV se retira à Saint-Germain-en-Laye. De Saint-Germain la Cour se transportera à Versailles et quand elle reviendra à Paris pendant la minorité de Louis XV, c'est aux Tuileries qu'elle s'installera.

Aux Tuileries encore habiteront Napoléon Ier, Louis XVIII, Charles X et Napoléon III.

Le Louvre, après le départ de Louis XIV, a été mis à la disposition des Académies, des Sociétés Savantes et des artistes. La Révolution supprime ces institutions de l'Ancien Régime. Mais elle est bientôt amenée à les rétablir sous un nouveau nom. C'est dans la Salle des Caryatides que l'Institut tiendra ses premières séances . c'est là que Bonaparte y sera reçu. En 1806 seulement l'Institut sera transféré sur la rive gauche dans le palais qu'il occupe toujours. Depuis cette date, l'histoire du Palais se confond avec l'histoire du Musée.

Léon GOSSET.

PEINTURES

① ÉCOLE ITALIENNE. — ÉCOLE ESPAGNOLE

C'est par les Primitifs italiens que doit commencer la visite de collections de Peintures. La **Salle des sept mètres** réunit la plus grande partie des œuvres florentines et siennoises appartenant au Louvre et se rapportant aux XIIIe, XIVe et XVe siècles.

Giotto. — Saint François recevant les stigmates

A Florence, la transformation rapide du XIIIe au XIVe siècle se marque entre la ***Madone aux Anges*** de Cimabue, proche encore du majestueux hiératisme byzantin, fonds traditionnel de l'art italien depuis six siècles, et le ***Saint François recevant les stigmates***, de Giotto (*), révélation d'un art nouveau, déjà pénétré de vie et d'émotion.

L'école siennoise, à la palette claire et brillante, est, pour le même temps, excellemment représentée par le

ENTRÉE : PORTE DENON

Au palier du milieu de l'Escalier Daru, tourner à droite

Portement de Croix de Simone di Martino (*). Autour de cette précieuse petite peinture d'une richesse de tons intense, se groupent des ***Madones*** de l'Ecole de Duccio ou du Maître du Manuscrit de Saint Georges. Le Florentin Daddi semble vouloir concilier les tendances de Sienne et de Florence dans son exquise ***Annonciation.***

Après les successeurs de Giotto : Agnolo Gaddi : ***Scènes de la Vie de Saint Jean-Baptiste ;*** don Lorenzo Monaco : ***Madones et Saintes Femmes au tombeau,*** on voit apparaître à Florence, dans la première moitié du XVe siècle, Fra Angelico, chez qui demeure l'empreinte de la haute spiritualité giottesque transposée par l'âme la plus candide et la plus pure qu'ait connue l'histoire de l'art.

Simone di Martino. — Le portement de croix

Fra Angelico. — La décapitation des Saints Cosme et Damien

Titien. — La mise au tombeau

Le ***Couronnement de la Vierge,*** grand rétable clair comme une aquarelle rehaussée d'or, est accompagnée de sa prédelle, c'est à dire de cette longue bande divisée en plusieurs compartiments qui sert de base à certains tableaux d'autel ; ici l'on y voit diverses scènes de la vie de Saint Dominique. Une grande fresque, la ***Crucifixion***, une étude d'***Ange*** d'Annonciation (?), un fragment de prédelle : la ***Décapitation des Saints Cosme et Damien*** (*) nous permettent de suivre dans ses principales étapes l'œuvre du bienheureux moine de Fiesole. Sa tradition se continuera à Florence, comme en témoignent les peintures de Benozzo Gozzoli (***Saint Thomas d'Aquin***) et ***la Vierge*** de Fra Filippo Lippi (**voir salle suivante**). Chercheur à l'esprit scientifique, Paolo Uccello, dans sa ***Bataille,*** se montre passionné de géométrie et de perspective.

La seconde moitié du XVe siècle, triomphale pour Florence, est illustrée avec éclat par Ghirlandajo et Botticelli. Tandis qu'un naturalisme intransigeant s'affirme dans le ***Portrait*** présumé de Fr. Sassetti, Ghirlandajo montre dans la ***Visitation*** des tendances décoratives déjà classiques. Les ***fresques*** de Botticelli ***pour la Villa Lemmi*** (*), d'une grâce raffinée, d'une poésie encore inconnue, sont l'expression la plus parfaite de l'idéal humaniste.

La fine petite ***princesse d'Este*** de Pisanello au profil de médaille, nous entraîne hors de l'école florentine, et nous allons retrouver, plus loin, l'initiateur, Gentile da Fabriano, dans la salle contenant la suite du XVe siècle. - **Traverser le Salon Carré et pénétrer à gauche.** - Là nous trouvons encore des œuvres florentines, la ***Grande Vierge*** entre Saint Frediano et Saint Augustin, de Filippo Lippi, la frise de ***portraits*** d'Uccello, le robuste ***Portement de Croix*** de Benedetto Ghirlandajo, etc. Gentile da Fabriano révèle dans sa ***Présentation au temple*** de curieuses recherches pittoresques et techniques. La salle voisine a été consacrée à la mise en valeur des fresques de Luini, le meilleur élève de Léonard de Vinci.

Revenons au **Salon Carré.** — Par nécessité topographique, anticipons sur la chronologie. Le Louvre est un palais, on se plaint souvent qu'il remplisse mal ses fonctions actuelles de Musée ; cependant, de la noblesse du décor et de la poésie de l'histoire vient aussi une lumière qui crée peut-être la vraie atmosphère des chefs-d'œuvre. Le **Salon Carré** remplit depuis le XVIIIe siècle son rôle de salle d'exposition. Il était consacré, à la fin du XIXe siècle, à la présentation des peintures les plus célèbres de toutes les écoles. L'ampleur de ses proportions a paru convenir davantage aux grandes peintures italiennes, particulièrement à celles de l'école vénitienne du XVIe siècle. Titien y figure, depuis la ***Mise au tombeau*** (*) jusqu'à l'***Antiope,*** œuvre de sa magnifique vieillesse, Tintoret avec sa ***Suzanne*** (*), admirable figure nue dans un paysage. Véronèse enfin domine la salle de ses grandes toiles : ***Noces de Cana*** et ***Repas chez Simon,*** si représentatives de la vie vénitienne, œuvres d'un somptueux décorateur et d'un grand coloriste. ***L'Antiope*** (*) du Corrège rayonne au proche contact de celle du Titien. Toute cette éclatante symphonie est à peine assombrie par les tableaux votifs bolonais d'Annibal Carrache et de Guerchin. Raphaël figure aux pans coupés avec un ***Saint Michel*** et une ***Sainte Famille*** donnés à François Ier par Laurent de Médicis, œuvres peintes avec la collaboration de Jules Romain.

La Galerie du bord de l'eau, ou **« Grande Galerie »**, a un passé riche d'histoire, depuis qu'elle fut construite au début du XVIIe siècle pour relier le Palais du Louvre à celui des Tuileries. Elle constitue, avec le **Salon Carré**, le premier Musée, ouvert en 1793. Nous allons y suivre l'histoire de la peinture italienne jusqu'à la fin

Botticelli. — Fresques de la Villa Lemmi

Corrège. — Antiope

Tintoret. — Suzanne au bain

Photos : Arch. Photogr. d'Art et d'Histoire - Paris

du XVIIIe siècle. L'éclairage de la paroi gauche étant le plus favorable, les plus belles œuvres s'y trouvent réunies. La visite se fera donc par travée, en regardant à gauche, puis à droite avant de poursuivre la route.

Le début de la première travée - panneaux droit et gauche - offre un ensemble des différentes écoles de la fin du XVe siècle et du début du XVIe avant les grands renaissants. L'Ombrie y règne avec Pérugin, le maître de Raphaël, auteur de sereines ***Madones.*** Il dresse devant un ravissant paysage le beau corps adolescent de son ***Saint Sébastien.*** Le fade ***Saint Jérôme*** de son élève Spagna contraste violemment avec l'âpre ***Saint Jérôme*** de Luca Signorelli.

Mantegna. — Saint Sébastien

A gauche, les premiers Vénitiens du XVe siècle apparaissent ; rudes saints archaïsants de Vivarini et de Crivelli ; œuvres de la famille Bellini, dont l'atelier va former les plus grands artistes du XVIe siècle vénitien. Le ***portrait d'homme*** de Giovanni Bellini subit, sans trop faiblir, le redoutable voisinage du puissant **Condottiere** qui est peut-être le plus parfait chef-d'œuvre d'Antonello de Messine, inoubliable vision d'énergie. Mais c'est le Padouan Mantegna qui, avec un ensemble qu'aucun Musée ne peut offrir, domine tout ici de son art viril, nourri de recherches archéologiques : ***Vierge de F. de Gonzague***, ***Crucifixion*** - fragment de prédelle - ***Saint Sébastien*** d'Aigueperse (*), et enfin deux compositions allégoriques pour le cabinet d'Isabelle d'Este : ***le Parnasse*** et la ***Sagesse victorieuse des Vices.*** L'influence du style de Mantegna se marque sur l'école de Ferrare, qui l'exagère, comme Cosimo Tura dans son ***Saint Antoine de Padoue.*** La paroi de droite, après Pérugin, offre des œuvres florentines qui annoncent et préparent Raphaël : Francia, Lorenzo di Credi, Albertinelli. La fin de la travée à gauche fait paraître le contraste entre l'archaïsante école milanaise avec la ***Présentation au Temple*** de Borgognone, et le génie naissant de Léonard de Vinci dans sa petite ***Annonciation.***

Raphaël. — La Belle Jardinière

La seconde travée consacre l'épanouissement de la Renaissance. La paroi de gauche n'est qu'une suite de chefs-d'œuvre. Nul Musée ne peut rivaliser avec le Louvre pour la gloire de Léonard de Vinci : grâces en soient rendues à la prédilection de François Ier pour ce grand homme qu'il fit venir près de lui et qu'il combla d'honneurs. Après la petite Annonciation, œuvre de jeunesse, c'est la ***Vierge aux Rochers,*** toujours belle et mystérieuse en dépit des ténèbres accumulées par l'altération des tons, le portrait de femme dit : ***La Belle Ferronnière*** ou ***Lucrecia Crivelli,*** le ***Saint Jean-Baptiste***, et, plus loin, dans la Tribune où ont été réunis quelques-uns des joyaux du Musée : ***la Joconde*** et la ***Sainte Anne.*** Autour du maître se groupent ses élèves : Boltraffio, Marco d'Oggione, Luini, Solario.

Raphaël. — Balthazar Castiglione

Titien. — L'homme au gant

Le Raphaël des Madones florentines est représenté par la ***Belle Jardinière*** (*) ; la ***Vierge au diadème bleu,*** exquise, est plus tardive, et le Raphaël, peintre des humanistes romains, apparaît tout entier dans le ***Balthazar Castiglione*** (*) qui n'est pas seulement son plus beau portrait, mais l'un des chefs-d'œuvre les plus parfaits de toute la peinture. Raphaël déjà rencontré au **Salon Carré,** nous attend encore dans la Tribune.

Plus loin, c'est Venise, dont nous contemplons ici, après les grandes compositions du **Salon Carré,** des œuvres plus intimes. Titien y règne. On peut, à quelques pas d'intervalle, passer du plus beau portrait de Titien : ***l'Homme au Gant*** (*) au plus beau portrait de Raphaël et ne savoir à qui donner le prix. On s'enchante à la chaude symphonie de la ***Laura Dianti,*** l'une des plus belles des « Belles » du Titien, comme à la douce familiarité de la ***Vierge au lapin.*** Lotto, Palma, lui font cortège. Véronèse reprend les « saintes conversations » avec plus d'apparat et il déploie ses plus brillantes inventions de coloriste dans de petites toiles, les ***Filles de Loth, le Calvaire.*** Ses portraits et ceux de Tintoret rendent manifeste la parenté qui unit entre eux les grands Vénitiens. Tintoret s'exalte dans la géniale esquisse du ***Paradis*** qui fait penser à la puissance d'un Michel-Ange et à la mysticité d'un Greco.

La paroi droite nous montre comment Andrea del Sarto et Fra Bartolomeo ont enrichi Florence de recherches nouvelles. Jules Romain (le ***Triomphe de Titus et de Vespasien***), suivant de Raphaël, ne peut nous laisser indifférents, puisqu'il fut l'inspirateur indirect des décorations de Fontainebleau. En combinant la leçon de Raphaël et celle de Michel-Ange avec l'exemple des Vénitiens, les Carrache ont l'ambition de créer un style classique commun à toute l'Italie. Par eux-mêmes, et par leur école - l'école bolonaise - par leurs brillants élèves : Guerchin, Dominiquin, l'Albane, le Guide, ils vont influencer notre peintre français Lebrun et tout l'art de Versailles.

Leonard de Vinci. — La Vierge, l'Enfant Jésus et Sainte Anne

Au centre de la Galerie : **La Tribune. *La Joconde*** (frontispice) de Léonard de Vinci impose son mystérieux et fascinant empire, en face de cette ***Sainte Anne*** (*) où le maître, en une composition merveilleuse, nous montre la pyramide des trois générations aboutissant à l'Enfant Dieu (*). Défigurée au XVIIIe siècle par l'addition latérale de deux bandes, elle a été récemment remise à son format original. Deux œuvres précieuses et exquises, le ***Saint Michel*** et le ***Saint Georges*** représentent la jeunesse inspirée de Raphaël. Le ***Concert champêtre*** (*) du Vénitien Giorgione, symphonie de deux beautés, l'humaine et la naturelle, répond à l'éclat doré du ***Mariage mystique de Sainte Catherine*** (*) de Corrège, tandis que ***François Ier***, vrai fondateur du Louvre, peint par Titien, fait pendant à la ***Jeanne d'Aragon*** de Raphaël.

La Tribune franchie, c'est à droite que se continue la tradition italienne avec les Bolonais, auxquels s'oppose violemment l'apparition du fougueux et puissant naturaliste Caravage. Son admirable ***Mort de la Vierge*** (*) nous montre les recherches de mise en scène et d'éclairage qui vont hanter nombre de peintres du XVIIe siècle. Les Napolitains Solimène ***(Héliodore)*** et Salvator Rosa ***(Bataille)*** expriment à leur façon le goût de leur école pour les effets de contrastes et les mouvements pathétiques. Le romain Panini, peintre d'architecture, annonce les belles et vivantes vues de Venise peintes au XVIIIe siècle par Canaletto, ***Notre Dame de la Salute*** (*), et Guardi, ***Vues de Venise au carnaval.*** Le prestigieux décorateur Tiepolo, deux siècles après Véronèse, fait revivre la fresque, parure des édifices et des palais vénitiens ; il est très insuffisamment représenté au Louvre.

Ainsi Venise, la dernière née des écoles italiennes, donne à l'Italie les suprêmes prestiges de l'histoire la plus illustre, qui va de Cimabue à Tiepolo.

Léonard de Vinci. Tête de Sainte Anne (détail)

Reprenons la paroi de gauche après la Tribune : on y rencontre l'Ecole espagnole du XVIIe siècle, placée logiquement, à la suite des grands Vénitiens et en face de Caravage à qui elle doit une partie de son développement. Les primitifs espagnols ont trouvé, plus loin, place dans le Vestibule des primitifs flamands auxquels certains d'entre eux s'apparentent.

Giorgione. — Le concert champêtre

Corrège. — Mariage mystique de Sainte Catherine

Ici, tout le glorieux XVIIe siècle espagnol est représenté depuis le farouche ***Saint Basile*** d'Herrera. Le Crétois Théotocopuli - dit le Greco - transfigure aux couleurs de l'âme espagnole le message de Venise : son ***Christ en croix*** (*) devant un grand ciel pathétique respire le plus ardent mysticisme.

Caravage. — Mort de la Vierge

Canaletto. — Notre-Dame de la Salute

Greco. — Christ en croix

Photos : Arch. Photogr. d'Art et d'Histoire - Paris

Ribera. — Le pied bot

Ribera, plus naturaliste, rappelle Caravage dans la ***Mise au tombeau***, tandis que son ***Pied bot*** pitoyable (*) atteste l'attirance des Espagnols pour les déshérités. C'est Velasquez, peintre de Cour, mais aussi le « peintre des peintres », comme l'appelait Manet, que nous connaissons ici avec ses deux portraits d'infantes, l'exquise petite ***Marie-Marguerite*** (*) aux fluides cheveux blonds, et la jeune princesse au maintien rigide présumée ***Marie-Thérèse*** (*). Puis nous revenons au mysticisme : Zurbaran nous replonge dans la vie monacale sereine et grave, avec ses ***Scènes de la Vie de Saint Bonaventure***. Murillo, de tous les Espagnols, le mieux représenté au Louvre, transforme en douceur mystique l'ardeur inquiète de ses devanciers dans sa ***Cuisine des Anges*** et dans son ***Immaculée Conception*** (*), tandis que le ***Petit mendiant*** le relie au naturalisme de Ribera.

Velasquez. L'Infante Marie-Marguerite

Murillo. — L'Immaculée Conception

L'âge d'or de l'Espagne est clos, mais comme pour Venise, après un siècle de sommeil, la peinture espagnole va connaître un nouvel éclat avec l'étonnante personnalité de Goya. Son portrait de ***Guillemardet*** et sa ***Dame à l'éventail*** (*) révèlent en lui l'initiateur d'une bonne partie de la peinture française au XIX• siècle.

Goya. — La dame à l'éventail

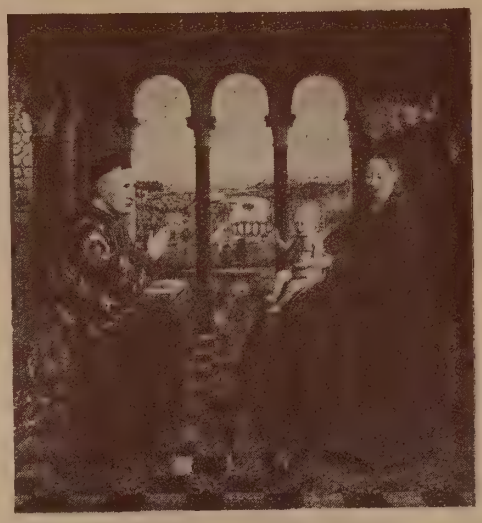
Velasquez. L'Infante Marie-Thérèse

② ÉCOLE FLAMANDE ÉCOLE HOLLANDAISE

Traversons - sans nous y arrêter - les travées flamande et hollandaise de la **Grande Galerie,** la **Salle Van Dyck** et la **Galerie Médicis**. Au-delà se trouvent les salles réservées aux **Collections Chauchard, Schlichting** et **Devillez.** Le visiteur pourrait les parcourir maintenant en se reportant aux commentaires qu'il trouvera à la page 17.

Revenant à l'entrée de la **Galerie Médicis,** le visiteur pénétrera alors sur sa gauche dans le **Cabinet XXVIII.** Il renferme les ***Primitifs espagnols*** qui peuvent ainsi être facilement comparés aux primitifs flamands avec lesquels certains présentent de grandes affinités.

Cabinet XXIX. — Cette première salle réservée à la Flandre groupe les maîtres qui ont fixé les grandes lignes de l'art au XV• siècle. Jean Van Eyck, dans un petit panneau, la ***Vierge d'Autun*** (*) montre l'universalité d'un génie à la fois réaliste et mystique et les voies nouvelles qu'il ouvre à l'art. Le ***Triptyque de la Famille Braque*** (*) de Van der Weyden a le dessin expressif et la construction sculpturale du maître qui a donné à l'école flamande le sens du pathétique. Un reflet adouci s'en retrouve dans la ***Déposition du Christ*** de son élève Dirk Bouts. Memling, en de charmantes images de piété attendrie, atteste la douceur de l'école brugeoise ; il sait être portraitiste sobre et sincère, notamment dans sa ***Femme âgée***.



Van Eyck. — La Vierge d'Autun

Van der Weyden. — Sainte Madeleine (Détail du triptyque de la famille Braque)

Cabinet XXX. — Les peintures rassemblées ici laissent entrevoir les premières manifestations d'un esprit nouveau. C'est Bruges encore qui domine à l'aurore du XVI• siècle avec son enfant d'adoption, Gérard David, dont les essais de clair-obscur (***Noces de Cana***) prouvent qu'il a compris la leçon de Van Eyck. Avec les ***Changeurs*** de l'Anversois Quentin Metsys, l'introduction de sujets profanes dans la peinture est définitivement consacrée. Gossart, dans le ***Diptyque Carondelet,*** unit l'exécution minutieuse des primitifs aux conceptions plastiques de la Renaissance. Le ***Saint Jérôme*** de Patenier prouve les progrès accomplis dans l'expression de l'atmosphère et de la perspective. Dans leur format exigu, les ***Mendiants*** évoquent la grandeur et l'originalité de Pierre Bruegel. Ils nous mènent jusqu'à la deuxième moitié du XVI• siècle.

Holbein. — Erasme

Cabinet XXXI. — Nous revenons un peu en arrière dans le temps pour voir avec le ***Christ descendu de la Croix***, de Joos Van Cleve, un excellent exemple de ces œuvres éclectiques de la première moitié du XVIe siècle où les artistes mêlent réminiscences italiennes et sentiment flamand. A ces œuvres s'opposent les peintures exécutées dans les Pays-Bas du Nord, avant que la scission avec les Pays-Bas du Sud fût un fait accompli. Dès cette époque, elles manifestent un réalisme original ainsi qu'un sentiment caractéristique du paysage. Le Louvre a l'heureuse fortune de posséder un des rares tableaux - et des meilleurs - de Gérard de Saint Jean. Lucas de Leyde est aussi présent. Mais l'œuvre la plus typique en même temps que la plus belle est la ***Nef des fous*** de Jérôme Bosch. Une vigoureuse vérité marque d'un accent un peu lourd le ***Nain du Cardinal de Granvelle*** par Antonio Moro.

Cabinet XXXII. — Une école voisine, celle d'Allemagne, s'y montre depuis ses origines jusqu'à l'apparition de Lucas Cranach.

Le **Cabinet XXXIII** réunit les deux plus grands maîtres de l'Ecole allemande du XVIe siècle, l'un que lui prêta la Suisse, Hans Holbein, représenté par une série de portraits dont quelques-uns comptent parmi ses plus parfaits chefs-d'œuvre : ***Erasme*** (*) ou ***Anne de Clèves,*** l'autre : Albert Dürer (*), qui, dans son propre portrait, manifeste le caractère intellectuel et tourmenté de son génie,

Rembrandt. — Les Pélerins d'Emmaüs

La chronologie amène au **Cabinet XXXIV** la suite de l'Ecole flamande parvenue au XVIIe siècle. A Brueghel de Velours, paysagiste encore traditionnel, s'oppose Paul Brill déjà épris d'ordonnance classique. Téniers est le plus célèbre des Flamands peintres de la vie populaire ou rustique ; il y a plus d'originalité foncière chez Brouwer et de vérité chez Siberechts.

P. de Hooch. — Intérieur hollandais
Les joueurs de cartes

Dans le **Cabinet XXXV** sont exposées les œuvres du XVIIe siècle flamand entrées au Louvre avec la donation La Caze en 1869 : ***Esquisses*** de Rubens, vibrantes et raffinées, puissante ***Tête de jeune homme*** attribuée à Van Mol.

Après le **Cabinet XXXVI,** traverser l'entrée de la **Galerie de Médicis** et le **Cabinet XIX** pour reprendre la suite des petites Salles latérales, consacrées, de ce côté, à la peinture hollandaise du XVIIe siècle.

Le **Cabinet XX** montre les œuvres de petits maîtres hollandais provenant de la donation La Caze - les Rembrandt et les Frans Hals de cette collection sont exposés dans la Grande Galerie -. Quelques Flamands, tels que Brouwer, figurent ici à cause de leurs affinités septentrionales.

Albert Dürer. — Son portrait

Après avoir vu dans le **Cabinet XXI** un beau portrait de ***Femme âgée de trente-quatre ans*** par Elias, nous arrivons dans le **Cabinet XXII**, sorte de « Tribune » des tableaux hollandais de petites dimensions où sont groupées des œuvres qui comptent parmi les plus précieuses du Louvre. Rembrandt nous fait passer du ***Ménage du Menuisier*** à l'***Ange Raphaël quittant Tobie*** et aux ***Deux Philosophes,*** et l'on arrive aux ***Pélerins d'Emmaüs*** (*). Dans un petit espace de toile, le génie d'un grand maître de la lumière et de la couleur enferme toute l'émotion du mystère et du miracle. A côté de cette chaude clarté dorée, c'est l'éclat nacré d'une perle qu'évoque dans sa ***Dentellière*** (*) avec une justesse de pinceau magique, Vermeer de Delft. Le Louvre n'a qu'un tableau de Vermeer et c'est l'un des plus petits, mais aussi l'un des plus beaux des quarante et quelque reconnus par la critique. Auprès de ces deux grands maîtres, Pieter de Hooch sait encore nous plaire par la reproduction simple et fidèle d'intérieurs à la lumière douce et aux belles harmonies colorées (*). Il domine toute une pléiade de petits maîtres qui se spécialisent dans les scènes de genre - thème favori de l'école hollandaise - où nous apparaît une image si vive de la vie du peuple et de la bourgeoisie : c'est, notamment, dans le **Cabinet XXIII** : la ***Femme hydropique*** de Dou, la ***Jeune Dame avec un militaire***, de Metsu, le ***Galant militaire*** de Ter Borch, la ***Fête dans une auberge***, de Steen.

Vermeer de Delft.
La dentellière

Photos : Arch. Photogr. d'Art et d'Histoire - Paris

Dans le **Cabinet XXIV**, de Metsu encore, le ***Marché aux herbes à Amsterdam***, et de Van Ostade, le ***Portrait de famille dans un intérieur.*** Nous retrouvons Ter Borch dans le **Cabinet XXV** avec le ***Concert.*** Le ***Choc de cavalerie*** de Wouwerman montre, allié à une scène militaire, ce goût pour la nature toujours si vif chez les Hollandais et dont nous avons entre autres un bon exemple dans le joli ***Paysage*** de Wynants.

Les **Cabinets XXVI et XXVII** contiennent les œuvres venant de la Collection de la Princesse de Croÿ.

Nous abandonnons maintenant la Hollande, dont nous retrouverons dans la ***Grande Galerie*** les tableaux que leurs dimensions ne permettraient pas d'accrocher dans les petites salles, et nous reprenons la peinture flamande à l'époque où rayonne l'Ecole Anversoise.

Rubens. — Le débarquement de Marie de Médicis

Rembrandt. — Son portrait âgé

La **Galerie Médicis** comprend une suite de compositions sur l'histoire de Marie de Médicis, commandée par la Reine et exécutée de 1622 à 1625 par Rubens et son atelier, pour orner une galerie du Palais du Luxembourg. Déposées en 1780, puis envoyées au Louvre, ces peintures furent en 1900 présentées dans la salle construite pour elles par l'architecte Redon. Quelque inégalité - effet de la collaboration - ne saurait diminuer notre admiration pour cette suite où l'on sent partout l'imagination du maître, et, plus d'une fois, sa main dans de superbes morceaux comme le ***Débarquement de Marie de Médicis*** (*) ou la ***Naissance de Louis XIII.***

Salle Van Dyck. — Trois compositions de l'Histoire de Marie de Médicis n'ayant pu trouver place dans la Galerie voisine ont dû être exposées ici, où Rubens est entouré des artistes, qui avec lui ont le plus contribué à la gloire de l'école d'Anvers. Nous retrouverons ces peintres dans la **Grande Galerie** ; mais il faut dès maintenant signaler de Van Dyck une ***Vierge aux donateurs,*** point de départ de son style personnel, ainsi que ***Renaud et Armide,*** romanesque et poétique évocation encore influencée par la palette vénitienne. Jordaens peint avec verve ***Jésus chassant les vendeurs du temple*** et traite un épisode tiré de l'Evangile comme une grande scène de genre animée et bruyante. Téniers fait valoir le fini impeccable de son exécution dans les ***Œuvres de miséricorde*** et dans un ***Intérieur de cabaret.***

La topographie nous oblige à quitter la Flandre au profit des grands maîtres de la Hollande réunis dans la première travée de la **Grande Galerie**.

Une série de chefs-d'œuvre nous montre le génie visionnaire de Rembrandt qui s'isole au milieu de ses compatriotes, portraitistes fidèles de visages, de maisons ou de paysages, amoureux de belle et bonne peinture sans mystère. C'est un monde de rêves aux prolongements infinis qu'évoquent ***Hendrickje Stoffels, Bethsabée au bain*** (*), ***Saint Mathieu,*** ou les différents ***Portraits de Rembrandt*** (*) à tous les âges. L'esprit n'est pas absent d'un morceau comme le ***Bœuf écorché*** qui semble ne viser qu'à la beauté de la matière.

C'est une des gloires du Louvre que de posséder de ce génie, le plus humain des mystiques et le plus mystique de ceux qui ont avec passion scruté la nature et poursuivi la vérité, une vingtaine de chefs-d'œuvre échelonnés depuis le temps des débuts jusqu'aux dernières années pathétiques d'une vie où le malheur lui-même fut une source d'élévation et d'inspiration.

Frans Hals. — La bohémienne

Rembrandt. — Bethsabée au bain

Le contraste est saisissant entre ces œuvres et la ***Bohémienne*** (*) de Frans Hals, dont le rire ne parle que de jeunesse et de vie extérieure. Une fois, pourtant, ce pinceau prestigieux s'est attaqué à un masque d'atrabilaire creusé par la pensée, et nous a donné la saisissante effigie de ***Descartes ;*** il revient à un modèle plus familier avec son ***Portrait de femme*** dont la facture large et franche a déjà un accent tout moderne.

Ruisdaël. — Le coup de soleil

Téniers. — L'enfant prodigue

Aux deux murs de cette travée, les paysagistes nous offrent des images nuancées de la Hollande, de sa terre humide, de ses horizons marins, et de ses cieux changeants, ce sont les ***Rivières*** de Van Goven, le ***Coup de Soleil*** (*), le ***Buisson,*** la ***Forêt*** de Ruisdaël, le ***Moulin à eau*** d'Hobbema. Si Potter et Cuyp animent leurs paysages d'animaux, quelquefois de personnages, n'est-ce pas pour évoquer mieux encore une terre riche, aux produits vigoureux ?

La deuxième travée de la **Grande Galerie** nous fait revenir définitivement à la Flandre du XVIIe siècle. Rubens règne, mais il n'est pas, comme Rembrandt, isolé au milieu des siens ; il les domine seulement de toute la grandeur d'un génie plus puissant, plus généreux, plus équilibré, d'un génie qui a touché à tous les genres et vraiment créé cet univers dont les autres ne connaissent que de faibles fragments. L'ampleur et la richesse de ses grandes compositions décoratives se retrouvent dans la ***Thomyris.*** Une suite de tableaux éblouissants nous montre d'autres aspects de ce génie multiple : la fraîcheur de la ***Vierge aux Anges*** et la finesse nuancée de la ***Fuite de Loth.*** L'admirable esquisse, ***Hélène Fourment et ses enfants*** (*) nous révèle à la fois les tendres intimités d'un cœur et les secrets de la plus lumineuse palette. Puis c'est la fougue débridée de la ***Kermesse*** ; l'atmosphère transparente et dorée de tels paysages, le ***Tournoi*** ou l'***Oiseleur*** (ce dernier sur le mur de gauche tandis que les autres sont sur le mur de droite).

Jordaëns. — L'enfance de Jupiter

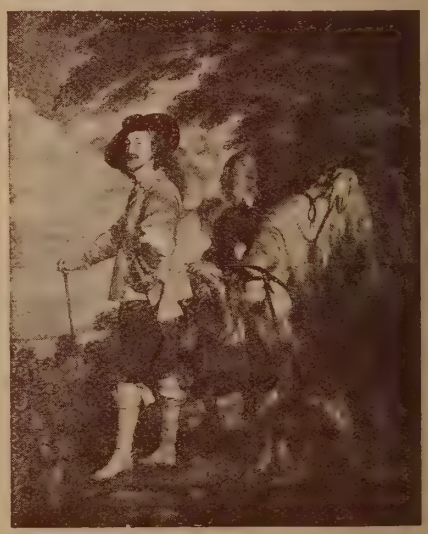
Rubens. — Hélène Fourment et ses enfants

A côté de lui, Jordaens garde une personnalité distincte. Il y a de l'accent, il y a même du recueillement dans la rudesse populaire des ***Quatre évangélistes.*** Dans l'***Enfance de Jupiter*** (*) un large équilibre classique tempère une truculence qui s'exerce librement dans le ***Roi boit.***

Aux antipodes de Jordaens, l'élégant Van Dyck procède, lui aussi, de Rubens. Les influences de l'Italie et de la Flandre se combinent dans sa poétique ***Vénus*** ou dans son ***Saint Sébastien ;*** mais c'est dans des portraits : un ***Homme et son fils,*** les ***deux Princes,*** qu'il exprime le meilleur de sa personnalité. Un jour, il trouva le modèle idéal dans la personne de ***Charles Ier d'Angleterre*** (*) : il se surpassa lui-même et nous laissa son chef-d'œuvre et un des chefs-d'œuvre de la peinture, le seul peut-être où aristocratie devienne synonyme de poésie.

Nous restons dans le rayonnement de Rubens avec les ***Natures mortes*** de son collaborateur Snyders, continué par Paul de Vos et même avec la ***Fête de Village*** ou l'***Enfant prodigue*** (*) de Téniers.

La transition entre deux écoles, la flamande et la française, nous est fournie par un artiste qui fait honneur aussi bien au pays qui l'a vu naître qu'à celui qui l'a adopté. Avec ses paysages nuancés et précis Van der Meulen évoque en même temps l'atmosphère des Flandres et les fastes du règne de Louis XIV.



Van Dyck. — Charles Ier d'Angleterre

Photos : Arch. Photogr. d'Art et d'Histoire - Paris

Parement de Narbonne. — XIV• siècle. — Détail

③ ÉCOLE FRANÇAISE
LES PRIMITIFS
XVII• ET XVIII• SIÈCLES

Ecole d'Avignon. — XV• siècle. — La Pietà

Le Musée du Louvre est le seul où l'on puisse étudier, du XIV• ou XX• siècle, l'évolution continue de la peinture française.

Pour cette longue visite à travers six siècles d'art, il faut d'abord se rendre à la **Salle des Primitifs**, en venant de l'extérieur par l'**Escalier Mollien** ou en quittant la **Grande Galerie,** à la hauteur des Italiens du XVII• siècle. On gagne **le vestibule** où figurent les deux rétables des Ducs de Bourgogne - Histoire de ***Saint Denis*** et de ***Saint Georges*** - premières années du XV• siècle.

La Salle qui suit contient des peintures des XIV• et XV• siècles qui ne représentent pas seulement les plus lointaines origines de notre art - peintures murales ou miniatures - : l'histoire de France y est largement évoquée : profil rude et sincère de ***Jean II le Bon,*** portrait de son fils ***Charles V en prières, avec sa femme,*** sur le ***Parement de Narbonne*** (*) (grisaille sur soie), effigie puissante et inquiète de ***Charles VII*** par le Tourangeau Jean Fouquet ; visage compassé d'***Anne de Beaujeu*** d'un anonyme du XV• siècle. Des scènes religieuses d'un profond sentiment accompagnent ces portraits. Un chef-d'œuvre s'impose dans sa grandeur simple et pathétique : La ***Pietà de Villeneuve-lès-Avignon*** (*).

Dans la Salle voisine, celle du XVI• siècle, on suit les deux courants en honneur auprès du royal mécène François Ier : on voit, dans des peintures allégoriques ou mythologiques, l'influence des Italiens de Fontainebleau, mais on y voit aussi comment cette influence est adaptée au goût français. Les portraitistes Janet, François Clouet, Corneille de Lyon, sont fidèles à la tradition de notre pays. Dessinateurs aigus, analystes et moralistes, ils ont tracé des effigies inoubliables, le plus souvent sur de minuscules panneaux. Un siècle y vit, où les passions les plus violentes se dissimulèrent sous les plus subtils raffinements des manières et des costumes : ***Guillaume de Montmorency, François Ier*** intime et son effigie officielle, ***Henri II, Charles IX, Elisabeth d'Autriche*** (*). Jean Cousin, le Père, avec son ***Eva Prima Pandora,*** reste, à sa manière, dans l'assimilation des influences italiennes, aussi français que Clouet.

La **Salle Le Nain** est une première étape dans l'étude du XVII• siècle qui se poursuivra plus loin. Le Flamand **Pourbus** se francise pour devenir le portraitiste de la Cour d'Henri IV. A droite, Ph. de Champaigne peint sa propre image grave et noble, non loin de ses austères amis, les jansénistes, qu'il a portraiturés : la ***Mère Angélique Arnauld,*** le ***Duc de Luynes.*** A gauche, les trois frères Le Nain retracent les scènes de la vie bourgeoise ou rustique. Des thèmes non moins familiers inspirent le réalisme mystique de Georges de la Tour ***(Nativité, Saint Jérôme).*** Louis Le Nain, l'homme de génie de la famille, nous introduit dans des intérieurs de paysans laborieux et dignes : ***la Forge, la Charrette,*** la ***Famille de Paysans*** (*) sont des œuvres alors sans analogues, respirant une simple et profonde humanité. Les ***Portraits dans un intérieur*** caractérisent la manière d'Antoine, l'aîné, les ***Joueurs de trictrac,*** celle de Mathieu.

Pour atteindre la **Salle Mollien** réservée aux grandes peintures du XVII• siècle, on traverse le vestibule et le palier où se déroule une partie des compositions sur l'***Histoire de Saint Bruno*** peintes par Le Sueur pour le couvent des Chartreux de Paris.

La **Galerie Mollien** est divisée en trois travées. La première nous fait, dès l'entrée - à droite et à gauche - retrouver Ph. de Champaigne, peintre de cour, avec ses beaux portraits de ***Louis XIII*** et de ***Richelieu,*** austère chrétien avec le ***Christ mort*** et l'admirable tableau des ***Deux Religieuses*** (*) dont la plus jeune est fille du peintre. Simon Vouet instruit à l'école de l'Italie, comme en témoigne sa ***Présentation au temple,*** dirigera l'atelier d'où sortiront Le Sueur, Lebrun, Mignard. Le Sueur n'est pas seulement le mystique peintre des Chartreux et l'auteur de ce tableau unique au XVII• siècle, la ***Messe de Saint Martin,*** il est un inventeur de grâces nouvelles avec son ***Histoire de l'Amour*** et ses ***Muses,*** peintes pour l'Hôtel Lambert.

Louis Le Nain. — Famille de paysans

Clout. — Elisabeth d'Autriche

Ph. de Champaigne — Les deux religieuses

Poussin. — L'inspiration du poète

Le XVIIe siècle est dominé par la puissante et fière personnalité de Poussin. Autour de son portrait, volontaire et grave, se groupent dans les trois travées quelques-unes des plus belles compositions du maître : ***Philistins frappés de la peste, Israëlites recueillant la Manne*** - à gauche - ***Diogène, Inspiration du poète*** (*), ***Bergers d'Arcadie, Triomphe de Flore*** - deuxième travée à gauche - ***Orphée, le Temps enlevant la Vérité, Apollon et Daphné*** et ***Paysages des Quatre Saisons.***

Comme Poussin, Claude Gellée - dit le Lorrain - passe presque toute sa vie à Rome ; il y peint des paysages ou des ports baignés d'une lumière radieuse ; on le suit au Louvre, de sa vision du **Campo Vaccino** à la note éclatante de l'***Ulysse*** ou de la ***Cléopâtre*** (*) - deuxième travée.

La troisième travée, où figurent encore Poussin et Claude Lorrain est surtout consacrée à la fin du siècle : Le Brun, dictateur des arts par la grâce du Roi, nous montre ici quelques-unes de ses meilleures toiles : ***Madeleine repentante, Crucifix aux Anges,*** portraits ; et nous le voyons tel qu'il fut dans le beau portrait que fit de lui Largillière. Son ennemi Mignard se portraiture lui-même, dans la même pose : il peint aussi ***Mme de Maintenon*** et nous le retrouvons, dans la salle voisine avec le beau portrait de la ***Famille du Dauphin.*** Cette dernière période est surtout illustrée par Rigaud et ses effigies d'apparat : ***Bossuet, Philippe V d'Espagne, Louis XIV*** vieux, d'une incomparable majesté.

La **Salle Denon** nous ramène à Lebrun et nous montre dans une lumière avare ses quatre ***Batailles d'Alexandre,*** destinées à la tapisserie, point de départ de sa faveu auprès du roi.

La **Salle Daru** répète dans ses dispositions la **Salle Mollien** ; elle présente une partie des peintures françaises du XVIIIe siècle appartenant au Musée, les autres étant exposées dans la **Salle La Caze** et la **Salle des pastels**. La première travée annonce l'aube du XVIIIe siècle avec Antoine Coypel, peintre du Régent (***Athalie*** et ***Esther***) et Ch. de La Fosse (***Moïse sauvé des eaux***). De beaux portraits nous font passer de Rigaud à Tocqué qui peint la ***reine Marie Leczinska*** et le ***petit Dauphin.*** La ***Madeleine*** de Nattier, vêtue de satin blanc, est bien jolie et peu repentie, et la ***Suzanne*** de Santerre bien profane aussi ! Boucher e Chardin s'annoncent ici, le premier avec ***Renaud et Armide,*** le ***Moulin*** et le ***Pont*** ; le second avec le ***Buffet,*** son début à l'Académie.

Chardin. — Le Bénédicité

La deuxième travée rassemble dans un raccourci saisissant les titres d'honneur du XVIIIe siècle. Au centre du panneau gauche, l'***Embarquement pour Cythère*** (*) de Watteau rayonne de sa chaude vapeur d'or, « Fête galante », qui incarne la grâce, la fantaisie et la mélancolie de ce peintre poète. A sa suite : Pater et Lancret ne sont que de bons peintres. Boucher nous montre sa double fécondité avec, d'une part, ses compositions mythologiques, ***Vénus chez Vulcain,*** la ***Cible d'Amour, Diane,*** et l'intime ***Déjeuner du matin,*** d'autre part. Son élève Fragonard, qui est tout plaisir de vivre et tout plaisir de peindre, met du charme même dans un tableau de concours, ***Corésus et Callirhoé.*** Il nous enchante dans une petite toile : ***Vœu à l'Amour.*** Chardin, peintre parfait, met autant d'intimité et de sentiment dans une nature morte - ***Ustensiles du fumeur*** - que dans ses petites peintures de la vie bourgeoise : le ***Bénédicité*** (*), la ***Mère laborieuse,*** la ***Pourvoyeuse.*** Joseph Vernet et Hubert Robert, paysagistes amants des ruines et des campagnes italiennes, sont un trait d'union entre Claude Lorrain et Corot. Greuze avec la ***Cruche cassée*** (*) et la ***Laitière*** a touché depuis un siècle et demi, un immense public. Nous le retrouvons dans la troisième travée peintre moralisateur avec la ***Malédiction paternelle,*** le ***Fils puni*** et l'***Accordée de Village.*** Il est aussi un excellent portraitiste (***Gluck***). Mme Vigée-Lebrun rivalise avec lui dans des portraits d'une grâce féminine exquise, mais un peu apprêtée : ses deux ***portraits avec sa fille - Mme Molé-Reymond.*** Prud'hon qui domine cette troisième travée de sa grâce hellénique, opère la transition du XVIIIe au XIXe siècle. Il y a encore dans ses allégories un souvenir de ses devanciers (***Psyché, Vénus, Zéphyr***) tandis que la ***Vengeance et la Justice poursuivant le crime,*** ou le portrait de l'***Impératrice Joséphine*** en font un précurseur du romantisme.

Le paysagiste Louis Moreau ouvre la voie aux recherches naturalistes du XIXe siècle avec sa ***Vue de Saint Cloud.***

Cl. Lorrain — Le débarquement de Cléopâtre

Greuze. — La cruche cassée

Watteau. — L'embarquement pour Cythère

Photos : Arch. Photogr. d'Art et d'Histoire - Paris

④ ÉCOLE FRANÇAISE
DEBUT DU XIXe SIÈCLE
ÉCOLE ANGLAISE

Géricault. Officier chargeant

Ici, pour éviter un détour important, force nous est d'interrompre l'ordre chronologique et topographique. Revenant sur nos pas jusqu'à la **Salle Denon,** nous entrons à gauche dans la **Salle des Etats,** destinée, sous Napoléon III, aux réunions des grands corps de l'Etat, aujourd'hui consacrée aux peintures françaises du milieu du XIXe siècle - 1815-1875 environ -. Avec son ***Radeau de la Méduse,*** Géricault, magnifique tempérament, met de la grandeur dans ce qui, peint par un autre, n'eût été qu'un fait divers tragique. Delacroix, dont le portrait révèle la distinction hautaine, grand esprit, grand peintre, grand coloriste, montre en de vastes compositions les principales étapes de son génie : ***Barque de Dante, Massacres de Scio*** (*), ***Sardanapale,*** la **Barricade,** les ***Femmes d'Alger,*** les ***Croisés.*** La lutte sans merci qui l'opposait à Ingres est oubliée : sans faire tort à Delacroix, nous admirons son ancien rival dans l'***Odalisque,*** la ***Baigneuse,*** la ***Source,*** (*), l'***Apothéose d'Homère,*** les portraits de ***Monsieur*** de ***Madame*** et de ***Mademoiselle Rivière,*** et de ***Monsieur Bertin.***

Delacroix. — Massacres de Scio

Ingres. — La Source

A la suite de ces deux modèles qu'il admire, le charmant Chassériau dans sa ***Suzanne,*** dans son portrait des ***Deux Sœurs*** (*), laisse parler son instinct de poète. Quelques chefs-d'œuvre représentent Corot : la ***Danse des Nymphes*** (*), la ***Femme à la perle,*** et Daumier : ***Crispin et Scapin,*** en face des grandes compositions et de quelques-unes des meilleures peintures de Courbet : l'***Enterrement à Ornans,*** l'***Atelier,*** l'***Homme blessé,*** l'***Homme à la ceinture de cuir,*** tandis que l'école des paysagistes de 1830 est illustrée par Rousseau : ***Coucher de soleil;*** Millet : les ***Glaneuses,*** le ***Printemps,*** et Daubigny.

Chasseriau. Les deux Sœurs

Avant de poursuivre notre visite des salles de l'ancien Louvre, il faut retourner sur nos pas pour voir une collection qui serait ensuite difficilement accessible. Reprenons la **Galerie Mollien** et tournons à gauche sur le palier. Un petit escalier nous conduit à l'étage supérieur. Là une série de salles isolées abrite la magnifique **Collection de Camondo.** Trois salles sont consacrées à la peinture du XIXe siècle : on en suit l'évolution, de Delacroix et de Corot à Cézanne et à Van Gogh en un précieux choix de toiles où dominent Degas et les impressionnistes. La ***Lola de Valence*** et le ***Fifre*** de Manet se font face. De belles œuvres de Monet représentent les différentes époques de sa vie : ***Bassin d'Argenteuil*** (*), ***Cathédrale de Rouen, Londres, Giverny.*** Sisley a sa belle ***Inondation à Port Marly;*** Pissarro, son ***Effet de givre;*** Degas, un admirable ensemble de compositions, de portraits, d'études de ***Danseuses*** (*) à l'huile ou au pastel, de ***Jockeys,*** de ***Femmes à leur toilette.*** La première salle de gauche nous montre les précurseurs de l'impressionnisme, Boudin et Jongkind; la deuxième salle nous offre avec ***les Jeunes filles au bord de la mer*** de Puvis de Chavannes, les lumineux pastels de Manet; Cézanne, avec ses ***Joueurs de cartes*** et son célèbre paysage : la ***Maison du pendu.***

Corot. — La danse des nymphes

Degas. — Classe de danse

Redescendant alors l'escalier, on traverse les salles des Primitifs français et, tournant à gauche, on suit la Grande Galerie, on traverse le Salon Carré et on entre dans la **Galerie d'Apollon** - étudiée à propos des « Objets d'Art » - Au centre du plafond, ***Apollon tuant le Serpent Python*** est une des plus belles compositions décoratives d'Eugène Delacroix. Ici le grand peintre a mis son œuvre personnelle en harmonie avec celle de Lebrun, créateur et ordonnateur de la Galerie.

La **Rotonde d'Apollon** et la **Salle des bijoux antiques** franchies, on pénètre dans la **Salle dite des Sept Cheminées** où sont réunies les peintures de l'époque impériale. David y est largement représenté. On le suit, de ses débuts - ***Mars et Minerve*** - au ***Serment des Horaces*** - 1784 - œuvre où s'affirme ce mouvement de « retour à l'antique » qui sera continué par les ***Sabines*** (salle voisine) et par ***Léonidas aux Thermopyles.***

Napoléon attend de David la consécration plastique de sa gloire. Le ***Couronnement de l'Impératrice*** immense « tableau-portrait » de toute

Monet. — Le bassin d'Argenteuil

David. — Madame Récamier

une cour, est l'une des quatre compositions historiques qu'il a commandées à son peintre.

David est un grand portraitiste, comme en témoignent tant d'effigies pleines de vérité, de style et de vie : ***son Portrait, M. et Mme Sériziat, Mme Chalgrin, Mme Récamier*** (*), ***le Pape.*** Toute une génération subit son influence directe ou non. Isabey, Gérard, Picot, suivant leur tempérament, continuent le portraitiste ou le coryphée d'un froid classicisme issu d'une fausse conception de l'antique. Son élève Gros marque à l'empreinte de sa personnalité fougueuse ses tableaux de l'épopée napoléonienne : les ***Pestiférés de Jaffa***, le ***Champ de bataille d'Eylau*** (*), le ***portrait de Fournier Sarlovèze.***

La petite **Salle Henri II**, du vieux Louvre, éclaire médiocrement de grandes compositions. P. Narcisse Guérin, qui dirigeait l'atelier rival de celui de David, affronte le redoutable voisinage des ***Sabines*** avec ***Enée et Didon***, ***Andromaque, Phèdre***, ***Clytemnestre***, grandes peintures froides et académiques. Gérard ajoute à David des grâces de son crû dans son ***premier baiser de l'Amour,*** inspiré par la statuaire, et Girodet montre une ardeur préromantique dans ***Atala***

Traversons maintenant les **Salles du Mobilier** des XVIIe et XVIIIe siècles où, çà et là, on peut glaner quelques peintures ou pastels qu'on y a placés pour donner de la vie à des reconstitutions d'ensembles.

Salles des Peintures anglaises des XVIIIe et XIXe siècles. — Les portraitistes y dominent, gloire d'une école inégalement représentée ici. Du portrait d'apparat de la reine Charlotte-Sophie par Ramsay à la délicieuse étude d'enfant - Master Hare - de Reynolds, on passe d'une tradition morte à une tradition vivante. Cette dernière, nous la suivons dans les effigies d'hommes sérieuses et distinguées, de Romney; dans un magistral portrait de l'Ecossais Raeburn - ***Captain Hay of Spot*** - dans ceux de Hoppner, d'Opie, de Philipps, et dans le charmant et célèbre petit pastel de Russell : la ***Fillette aux cerises***. Lawrence au début du XIXe siècle, apportera dans les Salons français le goût de ses études brillantes d'expression, un peu artificielles : ***lord Whitworth, Mme Ducrest de Villeneuve***. Il a ici un de ses chefs-d'œuvre : ***Angerstein et sa femme*** (*). Le paysagiste Constable révèle à certains de nos peintres une vision franche et sensible dont ils s'inspireront - ***Baie de Weymouth, Vue de Salisbury*** -. Bonington mort à 28 ans, est si mêlé au mouvement romantique de Paris qu'on a peine à le séparer de notre école : ***François Ier et la duchesse d'Etampes***. Son ***Versailles*** et sa ***Lagune de Venise*** sont deux chefs-d'œuvre de justesse et de couleur.

Gros. — Le champ de bataille d'Eylau

Lawrence. — Angerstein et sa femme

5 ÉCOLE FRANÇAISE XIXe SIÈCLE

La visite se continue ensuite par les peintures françaises du XIXe siècle exposées dans une série de salles donnant sur la Cour Carrée. La première est surtout consacrée à Ingres; on y voit : le ***portrait de Bocher***, une étude pour l'***Angélique*** de la Salle des Etats, la ***petite Baigneuse ;*** la ***Vierge à l'Hostie,*** le ***Pape tenant chapelle ; Chérubini et sa Muse***. L'amusant tableau de Heim : ***Charles X au salon de 1824*** est un document d'histoire artistique. Les ***paysages*** humides et pleins de sève de Georges Michel, et deux pittoresques ***Scènes de la vie paysanne italienne*** de Léopold Robert, montrent les deux tendances du paysage au début du XIXe siècle.

Plus loin, c'est Géricault qui s'impose par le nombre et par la qualité de ses peintures : Le ***Carabinier,*** les ***Chevaux barbes***, le ***Four à plâtre,*** les ***Courses,*** l'esquisse de la ***Méduse*** entourent le ***portrait présumé*** du jeune artiste. Près de lui, un de ses camarades, Horace Vernet (la ***Barrière de Clichy***) et quelques partisans du romantisme des sujets : P. Delaroche (***les Enfants d'Edouard***) d'une émotion un peu théâtrale ; Ary Scheffer (***Paolo et Francesca, Saint Augustin et Sainte Monique, Mlle Fauveau***) marquent dans l'exécution, certaines affinités classiques. Les notations acides et nuancées de Chintreuil ***(l'Espace)*** annoncent les recherches des paysagistes, de la fin du siècle.

L'école des peintres de Barbizon, que nous allons retrouver à la collection Thomy-Thiéry, se développe autour de la charmante décoration peinte par Corot, pour ses amis Robert, à Mantes ; Millet, avec l'***Eglise*** de son village natal ***de Gréville*** (*) et sa ***Baratteuse*** ; Th. Rousseau avec les riches sonorités de son ***Soleil couchant*** et la lumière limpide et subtile du ***Marais dans les Landes*** (*). Diaz, paysagiste, est le peintre habile des sous-bois ; Daubigny, sincère dans sa recherche de la nature, annonce presque déjà l'impressionnisme.

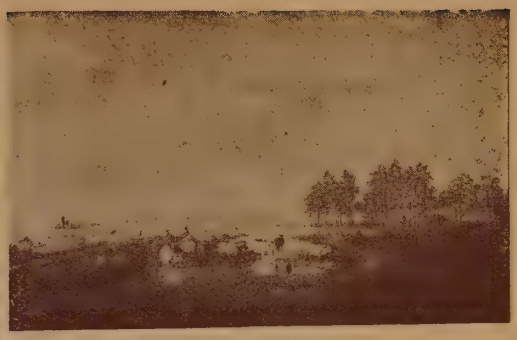
Le vestibule qui fait suite donne accès, à gauche, à la **Collection Arconati-Visconti** où quelques peintures et dessins français et italiens sont présentés dans un bel ensemble de mobilier. De là on peut jeter un coup d'œil, à gauche, sur la petite salle où, dans ses aquarelles et ses peintures, le sculpteur animalier Barye s'affirme portraitiste et paysagiste original.

Le vestibule contient quelques pièces de la plus grande rareté : ***La Femme en bleu*** (*) où Corot s'égale à Vermeer et, du même peintre, les ***Souvenirs de Castel Gandolfo*** et de ***Mortefontaine ;*** de Delacroix : l'émouvant ***portrait de Chopin,*** le pathétique ***Hamlet*** et l'esquisse de la ***Bataille***

Photos : Arch. Photogr. d'Art et d'Histoire - Paris

Millet. — L'Eglise de Gréville

Corot. — La femme en bleu



Rousseau. — Marais dans les Landes

de Taillebourg (la grande toile est à Versailles.)

Les gouaches de Van Blarenberghe, d'une harmonie délicate, ont donné leur nom à la salle qui contient encore des peintures de Noël Coypel et de Lemoine.

Nous entrons ensuite dans la précieuse et riche **Salle des pastels** du XVIII• siècle ; les premiers rôles sont occupés ici par La Tour et Perronneau, les deux rivaux. Le premier, observateur aigu, qui disait de ses modèles : « Je les emporte avec moi, tout entiers », fait vivre devant nous ***Louis XV,*** la ***reine Marie Leczinska*** (*), la ***marquise de Pompadour,*** le ***maréchal de Saxe.*** Perronneau, dans ses effigies de ***Van Robais*** et de ***Laurent Cars,*** montre, avec moins de force, un charme qui est bien à lui. Chardin eut dans sa vieillesse la révélation des ressources qu'offre le pastel. Il y acquit d'emblée une maîtrise qu'affirment ses trois portraits du Louvre.

La donation Wey-Isabey permet d'évoquer la grâce aimable et apprêtée d'Isabey, peintre de ***Napoléon*** et de ***Joséphine,*** du petit ***Roi de Rome***, du lourd ***Louis XVIII,*** de la charmante ***marquise d'Osmond***, qu'il traduit en des formats et avec des techniques variés.

La traversée de la collection des ivoires nous fait accéder ensuite à une petite salle Corot donnant sur une galerie de beaux dessins et pastels de Prud'hon. Les incomparables vues romaines du premier voyage en Italie de Corot : ***le Forum*** et ***le Colisée,*** à la fois précises et baignées d'une lumière limpide et enveloppante, les ***Portraits des enfants Robert,*** d'une sincérité de primitif, les fraîches études de ***Rosny*** constituent un premier et magnifique ensemble : nous allons bientôt retrouver Corot dans les collections Thomy-Thiéry et Moreau-Nélaton. Dans cette même Salle, à côté de la ***Blanchisseuse*** de Daumier (*), Delacroix aussi grand peintre dans un petit format que dans les plus vastes toiles, nous montre son ***Sardanapale,*** magnifique et pathétique esquisse du grand tableau, son ***Appartement du comte de Mornay*** (*), chef-d'œuvre de justesse et d'harmonie comparable dans une gamme de couleurs plus éclatante aux plus beaux Vermeer

Daumier. — La blanchisseuse

Les deux dernières salles de peinture du premier étage, malheureusement trop chargées de petits tableaux, réunissent les œuvres françaises du XIX• siècle léguées en 1902 par le collectionneur **Thomy-Thiéry.** L'école de Barbizon y tient une large place. Nous y retrouvons Millet (le ***Vanneur,*** la ***Brûleuse d'herbes,*** les ***Botteleurs de foin***) et Th. Rousseau avec dix toiles dont l'inoubliable groupe de ***Chênes,*** symbole de la majesté végétale, ainsi que le clair et délicat ***Printemps.*** Troyon y figure avec la ***Rencontre de troupeaux***, et dix autres toiles. Diaz avec dix œuvres aussi. ***L'Enlèvement de Rébecca,*** la ***Fiancée d'Abydos, Ophélie, Saint Georges***, montrent Delacroix sous les divers aspects de son génie. Corot est là aussi avec ***le Vallon,*** œuvre admirable dans sa simplicité, la ***Porte du Jerzual*** à Dinan, la ***Route de Sin-le-Noble.***

C'est dons la collection Thomy-Thièry qu'on peut le plus complètement apprécier Decamps qui eut des moments de grandeur, comme en témoigne sa ***Bataille des Cimbres***, mais qui, le reste du temps, orientaliste ou animalier, céda trop au ragoût et à la cuisine du métier. On verra ici : la ***Rue de Smyrne,*** les ***Catalans,*** le ***Rémouleur,*** les ***Sonneurs,*** les ***Chiens***

La visite de la peinture française au XIX• siècle s'achève au **Deuxième étage** dans les nouvelles salles. On accède à l'escalier - après la Salle de la Donation Rothschild, dans le vestibule de la Céramique française. Les murs de cet escalier portent des cartons décoratifs de Prud'hon, et ***la Paix*** (*), fragment de la décoration d'une grandeur sereine que fit Chassériau pour la Cour des Comptes.

Après un rapide coup d'œil aux peintures du palier où l'on est accueilli par un portrait de Bonnat, la ***Mère de l'artiste,*** et - à droite - aux deux salles qui mènent au Musée de la Marine (l'***Exécution***, de Regnault, ***Combat de coqs*** de Jérôme, ***Portrait d'une Dame*** de Bonnat), on pénètre dans la première des sept salles en enfilade, récemment aménagées. L'éclairage y crée l'atmosphère la plus favorable à l'étude de la peinture au XIX• siècle, de l'impressionnisme en particulier. La **Collection Moreau-Nelaton**, réunie par deux mécènes de haut goût : Adolphe Moreau et Etienne Moreau-Nélaton, le grand-père et le petit-fils, et donnée au Louvre en 1906, complétée par un legs en 1927, remplit à elle seule les deux premières salles. Une prédilection s'y marque pour deux grandes époques : celle de Delacroix et de Corot, puis celle de Manet et de l'Impressionnisme. La première salle se compose essentiellement de dessins et d'aquarelles auxquels sont jointes quelques peintures : Delacroix, Corot, Boudin, Jongkind, B. Morisot. Dans la

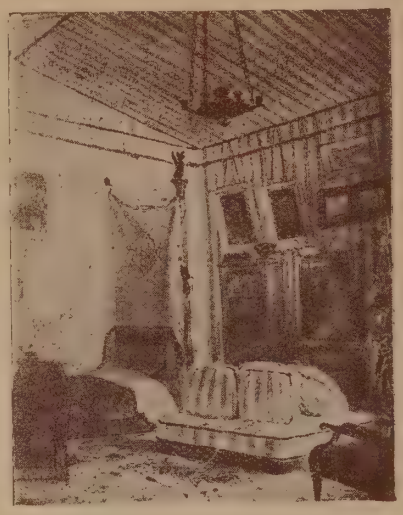
La Tour. — Marie Leczinska

seconde salle, Delacroix est représenté par onze toiles précieuses parmi lesquelles la ***Nature morte aux Homards***, chef-d'œuvre d'un genre unique dans l'œuvre du maître, et les ***Croisés à Constantinople***, réplique faite douze ans plus tard, en dimensions réduites et avec de nombreuses variantes, du grand tableau aujourd'hui dans la Salle des Etats. Le nombre et l'incomparable choix des œuvres nous font suivre Corot depuis son ***portrait***, exécuté avant ce premier voyage d'Italie où il peint le ***Pont de Narni*** (*), en passant par la ***Cathédrale de Chartres***, faite peu après son retour, jusqu'à ***Marissel*** et au ***Pont de Mantes***, qui le montrent à la fin de sa vie gardant toute la fraîcheur et toute la jeunesse de son âme.

Pour aborder l'impressionnisme, Fantin-Latour nous servira d'introducteur, avec son ***Hommage à Delacroix*** où figure Manet. Manet, que nous retrouverons à la **Salle VI**, nous montre ici une de ses premières grandes œuvres, l'une des plus passionnément discutées, le ***Déjeuner sur l'herbe***, 1863, où, dans le paysage aussi bien que dans le nu éblouissant de femme, s'affirme avec hardiesse une vision nouvelle. Les impressionnistes proprement dits : Monet (***Zaandam***, les ***Coquelicots***, le ***Pont d'Argenteuil***) ; Sisley, Pissarro, camarades de luttes, voisinent avec Berthe Morisot, élève de Corot, belle-sœur de Manet, qui mit dans tout ce qu'elle fit son charme féminin.

La petite **Salle Degas - III -** complète heureusement le magnifique ensemble de ce maître, déjà étudié à la Collection Camondo. Des tableaux d'histoire et des portraits, des sujets familiers, des dessins, des pastels, une suite de sculptures, portent témoignage pour un grand artiste aux dons multiples : ***Sémiramis***, les ***Malheurs d'Orléans***, son ***portrait***, celui de sa sœur la ***duchesse Morbilli***, le grand portrait de la ***famille Bellelli***, la ***tête de femme***, étude pour ce portrait, le ***violoncelliste Pillet***.

Chassériau. — La Paix



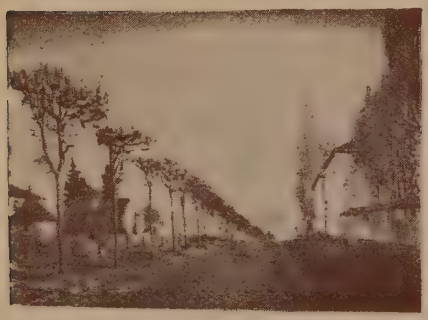
Delacroix. — Appartement du comte de Mornay

A cette réunion homogène succède, dans la **Salle Bonnat - IV -**, un aperçu éclectique de la peinture française au milieu du XIXe siècle : des tendances nombreuses s'y révèlent qui, toutes, n'aboutiront pas. A Corot : La ***Cathédrale de Sens*** et le ***Beffroi de Douai***, deux chefs-d'œuvre ; à Chassériau (***Tepidarium***, ***Vénus Anadyomène***, ***Combat d'Arabes***) à Fantin-Latour (***Portrait***) s'oppose le rêve chimérique de Gustave Moreau, tandis que l'enseignement d'Ingres se montre particulièrement heureux dans la charmante ***Liseuse*** de Flandrin, et plus ou moins fécond chez Cabanel, Delaunay et Baudry.

Dans la **Salle Chassériau - V -**, on voit la tradition de Chassériau se continuer et prendre toute son ampleur chez Puvis de Chavannes : ***Pauvre Pêcheur***, l'***Espérance***, la ***Toilette***, esquisse pour la ***Sainte Geneviève*** du Panthéon. En même temps s'annonce une génération de novateurs. Bazille, jeune talent tôt enlevé, dans son ***Portrait de famille*** et la ***Jeune fille à la terrasse***, donne déjà plus que des promesses.

La **Salle Caillebotte - VI -** consacre le triomphe de l'impressionnisme, et l'***Olympia*** (*), qui est de la même année que le ***Déjeuner sur l'herbe***, achève de nous montrer Manet, vers trente ans, pleinement conscient de sa vocation originale. Le grand initiateur de tout ce qui se fera dans la seconde moitié du XIXe siècle s'affirme avec le ***Balcon***, le ***Canapé bleu***, les portraits : ***Zola***, ***Mme de***

Corot. — Le Pont de Narni



Sisley — La route

Manet. — Olympia

Cézanne. — Nature morte

Photos : Arch. Photogr. d'Art et d'Histoire - Paris

Renoir. — Mme Charpentier

Callias, Mallarmé. Autour de lui se groupent les fraîches figures de Berthe Morisot : ***Hortensia, Mme Pontillon***. Plus directe est l'influence de Manet sur Eva Gonzalès : (***La Loge***) ; elle se combine avec celle de Bazille dans les ***Femmes au jardin*** de Monet. Le « Triptyque impressionniste » (don May), réunissant Monet, Pissarro et Sisley, souligne à la fois les affinités et les différences de ces trois coryphées du groupe.

C'est encore l'impressionnisme qui - **Salle Raymond Koechlin -VII -** nous enchante dans la lumière créée pour le mettre en valeur. Monet (le ***Déjeuner***), Sisley (***Canal du Loing, la Route***) (*), Berthe Morisot, voisinent avec des œuvres choisies de Renoir. On suit ici ce grand peintre, qui ne fut jamais inféodé à la pure orthodoxie impressionniste, du délicieux ***Moulin de la Galette*** qu'on pourrait appeler « l'Embarquement pour Cythère à Montmartre », jusqu'aux ***deux Nymphes*** qui forment l'autre pôle de sa carrière, et, dans ses exquises figures de femmes, ***Mme Charpentier*** (*), la ***Liseuse***, la ***Balançoire***, la ***Femme à la voilette***.

En plein triomphe de l'impressionnisme une réaction vers l'ordre et la synthèse apparaît avec Cézanne, Gauguin et Van Gogh. Le Gauguin de Bretagne et de Tahiti a ici la ***Belle Angèle***, le ***Cheval blanc*** (*), les ***Femmes de Tahiti***. Cézanne, le maître incontesté de l'art français en sa plus récente étape, nous montre, qu'il peigne dans l'Ile de France ou en Provence, sa vision à la fois grande, solide et subtile du paysage, (les ***Peupliers, Vue de l'Estaque***). Trois admirables ***Natures mortes*** (*) - donation Pellerin - nous permettent mieux encore de suivre les trois principales périodes de son évolution.

Gauguin. — Le cheval blanc

Les collections décrites ci-après sont réunies dans les salles situées à l'extrémité de la Galerie Médicis. Topographiquement c'est donc avant d'aborder les écoles flamandes, que le visiteur pourrait le plus pratiquement les parcourir.

Collection Chauchard. — La collection léguée en 1910 par M. Alfred Chauchard comprend des œuvres des maîtres français du XIXe siècle, principalement des paysagistes : Corot, l'école de Barbizon, Delacroix, Decamps, Isabey, etc., y sont représentés largement. Au milieu d'un ensemble important de tableaux de Meissonier, se trouve le célèbre « 1814 ». Le fameux ***Angélus*** de Millet (*) est entouré d'autres toiles universellement connues : la plus belle est ***la Fileuse*** (*).

Millet. — L'Angélus

Millet. — La Fileuse

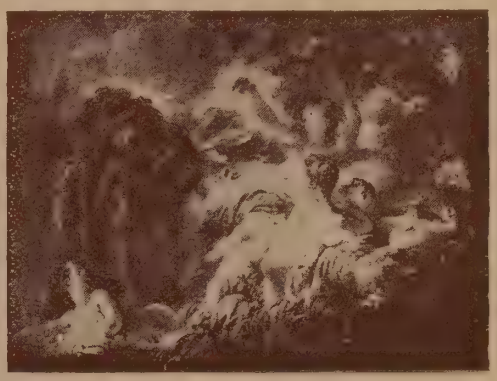
Collections La Caze et Schlichting. — Dans les salles suivantes se trouvent provisoirement réunies les œuvres les plus importantes des collections La Caze et Schlichting.

La collection La Caze fut léguée en 1869 par le Dr La Caze, mécène exemplaire qui s'attacha surtout aux œuvres des XVIIe et XVIIIe siècles. C'est surtout le XVIIIe siècle qui rayonne avec les portraitistes : Rigaud dont le ***petit Crequi de Lesdiguières*** respire un sentiment délicat et une distinction suprême, et ***Largillière*** dans la grande toile où il s'est représenté lui-même, ***avec sa femme et sa fille*** (*) devant un vaste paysage illuminé par les feux du couchant. Mais tout cède ici devant Watteau et Fragonard. De Watteau : l'***Antiope*** - Vénitienne de France -, les deux exquis pendants de l'***Indifférent*** et de la ***Finette***, si spirituels dans leur grâce énigmatique, l'***Assemblée dans un parc***, le ***Jugement de Pâris***, le ***Faux pas***, et l'étonnante symphonie en blanc du grand ***Gilles***, montrent la distance qui sépare ce grand et délicieux poète de ses satellites : Pater et Lancret. L'***Hercule et Omphale***, de Lemoine, et les ***Trois Grâces***, de Boucher, annoncent la verve endiablée de Fragonard, ses ***Baigneuses*** débordantes de vie (*), les esquisses fougueuses des ***Figures de fantaisie*** et ces deux joyaux qui sont : ***La chemise enlevée*** et la ***Bacchante endormie***. Greuze est là aussi, avec une étude de nu, rare dans son œuvre : ***Danaë***, sa limpide ***tête de jeune fille*** et l'esquisse de son ***propre portrait***. Des natures mortes et des figures également admirables de Chardin, des portraits de Nattier et de Tocqué confirment pour le XVIIIe siècle français, la sûreté de goût du donateur.

Très éclectique la collection léguée en 1914 par le Baron Basile de Schlichting s'étend du XVe siècle au XIXe siècle, à travers les différentes écoles. On y verra notamment des œuvres de Tiepolo, le lumineux tableau de Rubens : ***Ixion trompé par Junon*** et quelques autres charmantes pièces.

Paul JAMOT,
Membre de l'Institut,
Conservateur du Département des Peintures

Largillière. — La famille du peintre



Fragonard. — Les baigneuses

1. — Vierge en bois XIIe siècle

2. — Saint Michel XIIe siècle

3. — Vierge en pierre peinte XIVe siècle

4. — Sainte Madeleine XVe siècle

Les collections de sculptures du Moyen Age et de la Renaissance sont installées depuis 1934, dans la partie du **Rez-de-Chaussée** de la **Galerie du bord de l'eau** qui s'ouvre sous les guichets du Carrousel par la **Porte la Trémoille**, et, à la suite, dans le **Rez-de-Chaussée** du **Pavillon des Etats**. Elevé par LEFUEL, à la fin du Second Empire, celui-ci abritait, dans la Cour de l'En-cas, les voitures prêtes pour le Service des Tuileries voisines, les chevaux qui leur étaient destinés et les logements accessoires des palefreniers. Les travaux exécutés de 1932 à 1933 sous la direction de M. l'Architecte Albert FERRAN, ont fait, de tout cet ensemble, de belles salles claires et spacieuses d'une sobriété et d'une harmonie parfaites.

5. — Tombeau de Philippe Pot
Ecole bourguignonne XVe siècle

La première salle où l'on pénètre, est consacrée aux origines de la sculpture du moyen âge. Quelques morceaux byzantins ou préromans - fenêtre de gauche en entrant - amorcent la série des fragments de l'époque romane que domine la porte du Prieuré d'Estagel (Gard) et son tympan décoré de palmettes et de rinceaux de style oriental. A droite et à gauche, les deux statues - colonnes de Corbeil montrent le premier essor des imagiers du XIIe siècle vers la grande sculpture monumentale, préparé par les laborieuses recherches des ateliers languedociens, poitevins ou bourguignons dont quelques beaux chapiteaux à personnages illustrent les efforts.

Le ***Saint Michel*** de Nevers [2], animé et subtil, la ***Vierge auvergnate*** [1] solennelle et rigide, le beau ***Christ*** descendu de la croix, plein de sérénité expressive, comptent parmi les plus beaux échantillons de cette plastique encore hésitante, mais pleine de promesses d'avenir.

6. — Tête de Christ
Début du XVIe siècle

Une fois passée la porte d'Estagel, on entre en plein milieu gothique, et c'est la grandiose série de nos cathédrales, dont le décor est heureusement resté en place le plus souvent, qu'évoquent certains fragments réunis ici de Notre-Dame de Paris - tête de femme du ***Jugement dernier*** et torses d'une ***Descente aux limbes*** - ; de Chartres - ***l'Evangéliste Saint Mathieu*** [8] ; de Bourges - hauts-reliefs du jubé -. A l'art parisien, austère encore et d'une noble et calme élégance, appartient cette statue de ***Sainte Geneviève*** qui provient du portail de l'église consacrée à la sainte, qu'a remplacée le Panthéon ; à l'art rémois toute une série d'anges en bois au sourire aigu et au geste précieux

La statue de ***Childebert,*** provenant de St-Germain-des-Prés, nous donne un spécimen de ces images royales idéales par lesquelles, sans prétention à la ressemblance individuelle, s'exprimaient au temps de Saint Louis, le respect, le culte du souvenir, la majesté traditionnelle.

Un peu plus loin, nous rencontrons les créations des imagiers parisiens du XIVe siècle, qui sauront et aimeront traduire en images véridiques et implacables, la physionomie, le type réel du souverain couché sur son lit funéraire, « ***gisant*** », ou son allure, son port, son expression dans de réels et vivants portraits, qui reproduiront par exemple les traits de ***Charles V*** [9] quand il s'agira d'honorer le saint patron de la monarchie, Saint Louis, au portail de quelque église.

Tout autour, les ***Vierges à l'enfant*** du XIVe siècle [3 et 7], expriment aussi, dans une recherche de sentiments plus délicate, ce même besoin de vérité, élégante d'abord, de plus en plus familière ensuite, pour aboutir aux rusticités un peu lourdes du XVe siècle. Les images de la ***Passion*** se multiplient en même temps, plus expressives et plus animées depuis les petits bas-reliefs de marbre

7. — Vierge en bois XIVe siècle

8 — Saint Mathieu XIIIe siècle

9 — Charles V XIVe siècle

10. — Vierge d'Issenheim
Fin du XVe siècle

Photos : Arch. Photogr. d'Art et d'Histoire - Paris

11. — Saint Georges de Gaillon par Michel Colombe

du début du XIVe siècle jusqu'aux grands **Calvaires** où le talent dramatique des imagiers du Nord excellera : tel celui de **Nivelles** sur la Meuse qui ferme la perspective de cette salle.

Au-delà du Calvaire de Nivelles nous trouverions les séries de sculptures des Pays-Bas, issues de ce grand mouvement réaliste du XIVe siècle. Mais tournons plutôt à droite, pour rencontrer, en France même, le magnifique développement de l'art bourguignon tout pénétré du même esprit. Les grands tombeaux des ducs de Bourgogne sont à Dijon ; mais nous avons ici, celui du **grand sénéchal Philippe Pot** [5], qui provient de Citeaux, imposant cortège funèbre d'une impressionnante majesté. Vierges et saints l'accompagnent tout autour, provenant de Bourgogne, de Lorraine, de Champagne ou de l'Ile de France.

12. — Tombeau du Chancelier de Birague par Germain Pilon

Sur la Loire fleurit jusqu'au début du XVIe siècle, un art plus délicat et plus tempéré qui s'incarne dans l'œuvre de Michel Colombe représenté ici par le magnifique retable du **Saint Georges** de Gaillon [11] et par les Vierges de marbre d'Olivet et d'Ecouen.

Autour de ces monuments fleurissent déjà les arabesques italiennes, premiers témoignages de la Renaissance qui va se propageant par toute l'Europe. La galerie suivante nous en montre les effets au temps de Louis XII et de François Ier, à côté des œuvres robustes empreintes encore de l'esprit du moyen âge, comme le tombeau des **Poncher**.

Puis s'ouvre la grande salle dédiée à Jean Goujon et à la Renaissance classique française. Les **Nymphes** de la fontaine des Innocents, la **Diane d'Anet** [15] comptent parmi les monuments essentiels de cet art nouveau, ainsi que le monument du *cœur de* **Henri II**, avec le fameux groupe des **Trois Grâces**. Côte à côte, les statues funéraires de Pierre Bontemps : Olivier de Maigny et Philippe Chabot, celle de **René de Birague** [12] par Germain Pilon, représentent la solide tradition du réalisme français, le **Christ ressuscitant** et la **Vierge de douleur** de Pilon, annoncent un art religieux plus expressif et mouvementé qui sera celui du XVIIe siècle.

13. — Buste de Mino

On pénètre par la grande **porte du Consistoire,** débris du Capitole de Toulouse, de grande allure décorative, dans la **Salle Italienne** où sont exposés en belle place les **Esclaves de Michel-Ange,** fragments inutilisés du tombeau du pape Jules II [16], morceaux célèbres entre tous, apportés en France dès le XVIe siècle. Au fond une magnifique porte d'art milanais provenant de Crémone s'ouvre actuellement sur les galeries classiques du XVIIe siècle, tandis qu'un escalier servant comme de piédestal au svelte **Mercure** de Jean Bologne, conduit, vers le bas, aux galeries d'étude consacrées encore à l'art du moyen âge et de la Renaissance français et italien, et même vers le haut, aux cabinets où sont réunis les morceaux les plus exquis du XIVe et du XVe siècle italien, Madones de Donatello [14], et des della Robbia, bustes de Benedetto da Majano et de Mino de Fiesole, effigies puissantes, comme le **Dietisalvi di Nerone** [13], ou délicates comme la célèbre femme inconnue de Francesco Laurana.

15. — Diane d'Anet, attribuée à Jean Goujon

A la suite, en retournant vers le moyen âge, on trouverait les sculptures en bois de l'art rhénan et allemand, la belle **Vierge alsacienne d'Issenheim** [10] entre autres, et celles des Pays-Bas parmi lesquelles un important retable anversois du XVe siècle et de charmants morceaux des ateliers de Bruxelles, d'Anvers et de Malines.

Franchissant la porte de Crémone, nous entrons dans les collections de sculptures modernes, qui figuraient naguère dans les bâtiments du Vieux Louvre et dont celles au moins du XVIIe siècle, installées ici depuis 1936, prolongent les séries de la Renaissance où l'influence de l'Italie et de l'antiquité annonçaient déjà la formation d'un art classique.

14. — Madone de Donatello

La première grande salle qui s'ouvre devant le visiteur et porte le nom de **Salle Puget** est dominée par les œuvres grandioses du puissant sculpteur de l'époque de Louis XIV qui ornèrent les jardins de Versailles et y apportèrent, du reste, plus que n'importe quelles autres, le reflet de l'art baroque italien, la formation toute spéciale de Puget en ayant fait un adepte passionné de l'art du Bernin et de l'Algarde.

Mais il faut, avant de les aborder, considérer d'abord, vers la droite, les morceaux de l'époque de Henri IV qui marquent le prolongement de l'art de la Renaissance française, avec Prieur, Biart et Jacquet, de la Renaissance italienne avec Francheville, disciple fidèle de Jean Bologne. Une certaine survivance de l'art du moyen âge se marque même dans ces effigies précises et fortes, bustes ou priants, et jusque dans les statues triomphales, mais à la française, du jeune Louis XIV et de ses parents que dressa Simon Guillain au monument du Pont-au-Change.

Le **tombeau de Mazarin**, par Coysevox, au centre de la salle, après

16. — Esclave mourant de Michel-Ange

17. - Condé. Bronze par Coysevox

celui de ***J.-A. de Thou*** nous montre l'amplification majestueuse de ce thème funéraire du priant.

Cependant Sarrazin et les Anguier nous acheminent, dès le temps de Louis XIII, vers le classicisme pur, le Bernin qui n'est représenté ici que par quelques morceaux, moins significatifs que ses esquisses de terre cuite réservées aux vitrines de la salle suivante, commence à faire sentir son action prépondérante; enfin l'***Hercule***, le ***Milon de Crotone*** [20], le ***Persée et Andromède*** du grand provençal Puget éclatent comme des fanfares glorieuses, mais un peu discordantes dans l'harmonie générale de l'art français.

Les deux salles suivantes, dédiées à ***Girardon*** et à ***Coysevox***, les deux grands premiers rôles successifs du décor de Versailles nous permettent de mieux apprécier la mesure et la grandeur simple de cet art français du temps de Louis XIV, dont les deux beaux ***Vases*** de Girardon placés à l'entrée, les interprétations de l'antique, si nobles et si pleines à la fois de souplesse vivante, telles que l'***Amphitrite*** d'Anguier, la ***Vénus accroupie*** et la ***Nymphe à la coquille*** de Coysevox, sont de merveilleux spécimens.

Ces grands décorateurs sont en même temps, Coysevox surtout, de magnifiques portraitistes et ces deux salles contiennent une série de magistrales effigies du roi lui-même, d'hommes de guerre, ***Condé*** [17] et ***Vauban,*** d'hommes de gouvernement, ***Letellier*** et ***Colbert***, d'artistes ***Lebrun***, ***Coypel***, ***Coysevox*** lui-même.

20. — Milon de Crotone par Puget

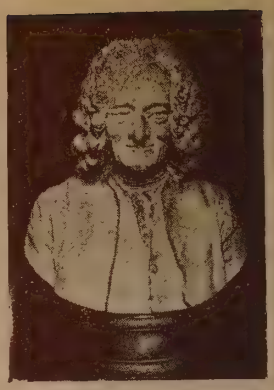
On y voit aussi, vers la fin du règne du grand roi, l'art solennel de Versailles s'émanciper, s'égayer dans des créations délicieuses comme la ***Duchesse de Bourgogne en Diane*** de Coysevox, les ***Nymphes*** de Frémyn, ou les dieux champêtres de Coysevox et de son neveu Coustou, qui animaient le décor des jardins de Marly.

7 XVIIIe ET XIXe SIÈCLES

La suite de l'évolution de notre art français après 1715 est malheureusement interrompue pour un temps, à cet endroit et à cette date. On la retrouvera plus tard dans la prolongation de cette galerie du XVIIe siècle qui se dirige déjà vers le **Pavillon de Flore** et dans les salles de ce Pavillon même qu'occupe encore le Ministère des Finances.

19. — Louise Brongniart par Houdon

Mais l'imminence même de ces installations futures a engagé la Direction du Louvre, à sacrifier provisoirement les salles consacrées naguère, sur la Cour Carrée, aux sculpteurs des XVIIIe et XIXe siècles, salles réclamées par le développement nécessaire des Antiquités Orientales. Quelques pièces importantes seulement de l'art du temps de Louis XV et de Louis XVI ont été temporairement dissémiminées dans les salles du premier étage réservées à la peinture. On y trouvera la ***Marie Leczinska*** de Coustou, la ***Vénus*** d'Allegrain, l'***Amour taillant son arc***, de Bouchardon, la ***Diane*** de Houdon, le ***Mercure*** de Pigalle et la ***Baigneuse*** de Falconet et surtout un bon nombre de bustes excellents et célèbres des Lemoyne, Caffieri, Pajou, Houdon, le ***Voltaire*** [22] et la petite ***Louise Brongniart*** [19] notamment, de ce dernier, maître incontesté du portrait français.



22. — Voltaire. Marbre par Houdon

Pour le XIXe siècle, le classicisme rigoureux de la période révolutionnaire et impériale se fera moins regretter; l'art de Julien, de Chaudet, de Pradier se trouvera cependant représenté par quelques morceaux typiques sur le palier de l'escalier Mollien ; on pourra surtout constater au voisinage des grandes œuvres du romantisme pictural, le retour de notre sculpture au pittoresque et à la réalité vivante, avec le ***Petit pêcheur*** de Rude, avec le ***Lion au serpent*** de Barye, tandis que le ***Centaure et Lapithe*** de ce dernier témoigneront, ainsi que ses magnifiques modèles des groupes du nouveau Louvre (placés sur l'Escalier Assyrien à la Colonnade), de son sentiment du style et de la grandeur décorative.

La dispersion provisoire de la **Salle Carpeaux** nous privera d'une grande leçon. Au moins pourra-t-on encore apprécier son génie de portraitiste dans quelques bustes vibrants, plâtres originaux des portraits de ***Mlle Fiocre*** et de la ***princesse Mathilde,*** du ***marquis de Laborde*** et d'***Alexandre Dumas*** (Escalier Mollien), bronzes de ***Beauvois, Giraud, Garnier, Gérôme,*** (Salle des États), et dans la grâce élégante de sa statue du ***Prince Impérial*** (Salle Chauchard).

Déjà la limitation forcée des salles consacrées anciennement à la sculpture moderne avait amené à placer au milieu des salles consacrées à la peinture moderne, au deuxième étage de la Colonnade, quelques bronzes de Mercié et de Paul Dubois, d'Aubé, de Frémiet et d'Injalbert, de Bartholomé enfin, de Dalou et de Rodin (l'***Age d'airain*** et le ***Saint Jean Baptiste***). C'est là qu'il faudra encore aller chercher, pour le moment, les témoins de la sculpture française de a fin du XIXe siècle, en attendant la constitution prochaine de la galerie qui affirmera la continuité ininterrompue de notre grande tradition plastique du XIIe jusqu'à la fin du XIXe siècle.

21. — La Danse, par Carpeaux

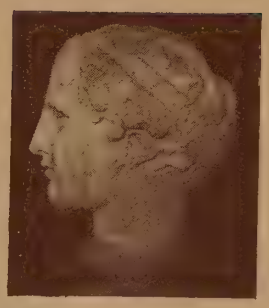
24. — Angélique Morand par Dalou

Paul VITRY,
Conservateur du Département des Sculptures Modernes.

Photos : Arch. Photogr. d'Art et d'Histoire - Paris

Métope d'Olympie

Frise du Parthénon



Tête Laborde

⑧ ANTIQUITÉS GRECQUES ET ROMAINES

Vingt-neuf salles du **Rez-de-Chaussée** sont consacrées à la Sculpture Grecque et Romaine.

Pour suivre l'ordre chronologique, la visite devra commencer par la **Salle Archaïque**, située à peu près au centre de cette série de salles. Pour l'atteindre, le visiteur, entré au Louvre par la **Porte Denon**, suivra la **Galerie Daru** jusqu'au pied de l'escalier au haut duquel se dresse la ***Victoire de Samothrace***. Il pourra admirer d'en bas, en passant, ce chef-d'œuvre unique de la sculpture grecque, qu'il contemplera plus à loisir lorsque l'itinéraire indiqué ci-après le conduira au premier étage.

La Dame d'Auxerre

Descendant maintenant sur sa gauche les quelques marches qui mènent au **Vestibule des Prisonniers barbares**, il verra s'ouvrir devant lui la **Rotonde d'Anne d'Autriche**, qui précède immédiatement la **Salle archaïque** où commence la visite.

La première période de la sculpture grecque est la période dite archaïque qui s'étend du VII• siècle au début du V• siècle av. J.-C. : les types y sont peu nombreux et simples, figures assises ou debout dans une attitude hiératique immuable. Dès le début et en raison même des conventions qui les retiennent sur la pente du naturalisme, les artistes grecs montrent un sens raffiné des formes et des proportions et le goût de la grandeur. Deux principales tendances se partagent l'art archaïque, l'une donne le style ionien - côte d'Asie-Mineure et îles voisines -, l'autre le style dorien - île de Crète et Grèce d'Europe, en particulier le Péloponèse -. Dans la première, domine la grâce et la souplesse élégante ; dans la seconde, la clarté et la force. La péninsule attique (Athènes) et les Cyclades assurent la transition entre ces deux tendances, dont l'union féconde s'accomplira à Athènes au V• siècle.

La plus ancienne sculpture grecque est la statuette de femme à perruque égyptienne - dite ***dame d'Auxerre*** (*) - dont la tunique plate est décorée de motifs géométriques (VII• siècle av. J.-C., style dorien). Au centre de cette **Salle archaïque** se dresse la ***Héra de Samos*** (VI• siècle av, J.-C.) enveloppée dans sa draperie ionienne finement plissée, sous laquelle transparaissent les formes admirablement modelées ; les ***Apollons archaïques*** d'***Actium*** et de ***Paros ;*** les statues funéraires de ***femmes assises***, provenant de la nécropole de Milet, datent de la même période ainsi que la tête attique finement ciselée, dite ***tête Rampin***. Face à la ***stèle funéraire***, gravée et peinte d'un gracieux éphèbe vêtu de « l'himation » (Athènes, fin du VI• siècle,) le magnifique ***torse de Milet*** à la musculature puissante, clairement détaillée (début du V• siècle) montre les progrès accomplis par l'art archaïque dans la connaissance du corps humain et annonce l'art classique.

De la **Salle archaïque** on passera dans la **Salle du *Parthénon*** où sont réunies les plus belles sculptures grecques du V• siècle av. J.-C. que possède le Louvre. Sur la paroi du fond, au centre, le fragment de la ***frise du Parthénon*** - 448-432 av. J.-C. - peut-être le plus beau bas-relief du Musée : il représente un groupe de jeunes filles athéniennes prenant part à la procession des Panathénées, réglée par des ordonnateurs (*). De part et d'autre de ce bas-relief deux têtes, provenant l'une de la même frise, l'autre d'une métope du Parthénon. Puis en deux parties symétriquement disposées, les bas-reliefs du ***Prytanée de Thasos :*** Apollon et les Nymphes - Hermès et les Charites ou Grâces -, qui montrent le passage du style archaïque au style plus libre de la première moitié du V• siècle. En face, deux ***métopes du Temple de Zeus à Olympie*** (vers 450 av. J.-C.) : ***Héraclès apportant à Athéna les oiseaux du lac de Stymphale*** (*) - ***Héraclès et le taureau de Crète***, offrent un bel exemple de la sculpture grecque monumentale, immédiatement antérieure au Parthénon ; des fragments des métopes du même temple sont exposés dans cette salle ainsi qu'une ***métope du Parthénon :*** Centaure enlevant une femme lapithe. On remarquera encore la tête de déesse, provenant d'un fronton du Parthénon, dite ***tête Laborde*** (*) et, face à la fenêtre centrale, la statue de femme à demi étendue, au beau visage douloureux, connue sous le nom de ***Suppliante Barberini*** (*), qui a peut-être figuré dans la décoration d'un fronton - vers 440 av. J.-C., enfin, la ***Minerve au collier,*** la plus importante réplique du chef-d'œuvre de Phidias, l'Athéna Parthénos.

La Suppliante Barberini

Les salles suivantes contiennent,

sauf quelques exceptions, non plus des originaux grecs, mais des répliques, exécutées à l'époque romaine, des œuvres les plus célèbres des grands sculpteurs grecs. **Salle de Phidias :** au centre, la ***Minerve Ingres***, statue colossale majestueusement drapée, appartient à l'école de Phidias ; elle est encadrée par une statue de ***Femme voilée*** qui représente le style sévère du Péloponèse et par un bel exemplaire du type connu sous le nom d'***Apollon de Cassel***, œuvre de la jeunesse de Phidias. En face : une ***Athéna***, mutilée, qui formait avec le ***satyre Marsyas*** un groupe animé dû à Myron ; une statue d'athlète restaurée en ***pugiliste*** dont l'original est attribué à Pythagoras de Rhégium, sculpteur d'origine ionienne de la première moitié du Ve siècle avant J.-C.

On trouvera dans la salle suivante - **Salle de Polyclète** - plusieurs répliques des œuvres de Polyclète, (le plus grand sculpteur du Ve siècle avec Phidias) : le ***Diadumène***, athlète se ceignant le front d'un bandeau - torse seul antique - et l'***Amazone blessée*** - partie inférieure restaurée inexactement -. Ces statues étaient célèbres pour la sereine beauté de leur visage et l'équilibre savant de leur attitude. Contre la paroi du fond sont disposées des statues ou statuettes qui se rattachent à l'école de Polyclète : la statue d'Arès connue sous le nom de ***Mars Borghèse ;*** deux répliques du ***Narcisse*** et un ***Discobole au repos*** - fin du Ve siècle. Près des fenêtres, la charmante ***Vénus Génitrix***, qui offre dans l'art grec l'un des plus anciens exemples de draperie « mouillée » reproduit peut-être une Aphrodite due à l'athénien Callimaque (vers 440 avant J.-C.) enfin l'***Athéna à la ciste***, rappelle la manière de Céphisodote, père de Praxitèle. Au centre, la ***Pallas de Velletri***, dont l'ample draperie rappelle le style de Phidias, montre un visage énergique et pensif de « Walkyrie » intellectuelle. L'original en est attribué à Crésilas (deuxième moitié du Ve siècle) ainsi que la statue du héros homérique ***Diomède***.

Vénus de Milo

Apollon Saurochtone

Dans la dernière salle de cette galerie, **Salle de Praxitèle**, nous abordons l'art du IVe siècle moins noble que le grand art classique du Ve siècle mais plus humain, plus proche de la nature. De part et d'autre de la ***Vénus d'Arles***, l'élégante ***Diane de Gabies*** et le sinueux ***Apollon saurochtone*** - « au lézard » (*), offrent des aspects caractéristiques de l'art de Praxitèle ; dans cette salle et dans la salle suivante - **Salle de Bacchus**, galerie de la Vénus de Milo - on remarquera d'autres types praxitéliens, notamment l'***Eros du Palatin***, le ***Satyre verseur*** et le ***Satyre accoudé*** - torse d'une exécution magnifique, une très belle tête et un torse provenant de deux répliques différentes de l'***Aphrodite de Cnide***, chef-d'œuvre de Praxitèle.

La **Salle de la Vénus de Milo** est consacrée à la statue antique la plus célèbre du Louvre, original grec dont on ignore l'auteur ; on ne sait pas quel était le geste des bras. Quant à la date, bien que la majesté de l'attitude et la sérénité du visage évoquent avec force les vertus essentielles de l'art grec classique, certains détails techniques permettent de penser qu'il faut placer la ***Vénus de Milo*** (*) à l'époque hellénistique.

Aucune des sculptures antiques du Louvre ne peut, de façon sûre, donner une idée de l'art pathétique de Scopas, l'un des trois grands sculpteurs du IVe siècle avec Praxitèle et Lysippe. Des œuvres de ce dernier, qui fut le contemporain d'Alexandre, la **Salle de Lysippe** contient par contre plusieurs répliques importantes. Un ***Hermès*** aux formes élancées paraît se rattacher au style de ce maître, dont le geste ou le mouvement de l'***Eros ailé bandant son arc,*** et de l'***Hermès rattachant sa sandale*** (*) - donnent une idée plus vivante et plus fidèle ainsi que les deux statuettes d'***Héraclès assis,*** dit « Epitrapézios ».

Après la **Salle des Poètes grecs**, la **Salle d'Alexandre** contient deux portraits importants du célèbre conquérant macédonien : l'un connu sous le nom d'***Hermès Azara*** d'après Lysippe ; l'autre est un portrait idéalisé de l'époque hellénistique. Autour d'Alexandre sont groupés des portraits de dynastes hellénistiques, notamment une très belle tête d'***Antiochus III.*** Dans les trois vitrines quelques précieux marbres de petite dimension.

Hermès rattachant sa sandale

Dans le corridor qui suit, **Corridor de Pan**, deux vitrines présentent, l'une des sculptures du Ve siècle, notamment tête de jeune femme en relief coiffée du cécryphale, l'autre des sculptures préhelléniques et archaïques : ***idoles cycladiques*** (environ 2.000 avant J.-C.), statuettes de ***femme assise*** (VIe siècle av. J.-C.).

Centaure dompté par l'Amour

A droite, une porte donne accès à la **Salle des Caryatides**, sculptures de l'époque hellénistique (fin du IVe-Ier s. av. J.-C.), époque où dominent le naturalisme et une recherche parfois exagérée de l'expression. Dans la première partie de cette salle, on remarquera à gauche la pose gracieuse et vraie de l'***Ariane endormie***, puis dans le milieu de la nef, une magnifique réplique de la ***Vénus accroupie***, d'après Doïdalsès de Bithynie, l'***Enfant à l'Oie*** d'après Boéthos de Calchédon (IIe siècle av. J.-C.) première apparition d'une vraie figure d'enfant dans l'art grec, la ***nymphe à la coquille*** finement

Photos : Arch. Photogr. d'Art et d'Histoire - Paris

drapée. Le long des murs ou dans les fenêtres, le ***Galate blessé***, d'après un original de l'école de Pergame (IIe siècle av. J.-C.), l'***Hermaphrodite*** Borghèse, le ***satyre Marsyas*** suspendu avant le supplice que va lui infliger Apollon, le ***Faune à l'enfant***, sculpture à la fois réaliste et sentimentale, de même que le ***Centaure tourmenté par l'Amour*** (*) ; enfin la célèbre ***Diane de Versailles***, mouvante figure de plein air.

Architrave d'Assos

Auguste

Le visiteur reviendra sur ses pas et, tournant à droite dans le corridor, se dirigera, en passant dans la **Salle Archaïque** visitée au début, vers la **Rotonde d'Anne d'Autriche**, où sont réunis les portraits de poètes, philosophes et orateurs grecs. On remarquera dans la fenêtre centrale, le ***Vase Borghèse***, décoré d'un relief bachique, dans le style néo-attique (Ier siècle av. J.-C.).

A gauche, s'ouvre la **Salle des bas-reliefs hellénistiques** qui reproduisent des modèles de l'art alexandrin ou néo-attique : ***Autel des douze dieux***, ***Satyre chasseur***. Au centre de cette salle, le guerrier dit ***Gladiateur Borghèse***, par Agasias d'Ephèse (Ier siècle av. J.-C.). Avant d'entrer dans les salles de portraits romains, le visiteur passera par le **Vestibule des prisonniers barbares** où sont exposées des sculptures en marbre polychrome de l'époque romaine, et qui donne accès à la **Cour du Sphinx**.

Les sculptures réunies dans cette vaste salle sont d'époques différentes mais elles ont toutes un caractère architectural. On admirera le style puissant et sobre, la saveur originale des bas-reliefs archaïques du ***Temple d'Assos*** (*) - VIe siècle av. J.-C. : ***exploits d'Héraclès*** ; le mouvement décoratif de la ***frise du Temple d'Artémis*** à ***Magnésie du Méandre*** (IIe siècle avant J.-C.) : ***combats entre Grecs et Amazones*** ; la richesse ornementale des fragments d'architecture du ***temple d'Apollon à Didymes*** ; le coloris nuancé de la ***mosaïque d'Antioche*** (IIe siècle après J.-C.) : ***jugement de Pâris***, enfin l'imposante statue du ***Tibre***. Sur la Cour du Sphinx s'ouvre d'une part une série de salles consacrées soit à la sculpture funéraire grecque, grands vases de marbre et stèles ; - soit aux bas-reliefs romains - scènes de sacrifices - : à cette série appartient l'***autel d'Ahénobarbus*** (env. 100 av. J.-C.) dont la face principale offre l'un des plus anciens exemples du bas-relief historique romain.

Trésor de Boscoreale

De l'autre côté de la Cour du Sphinx s'ouvre la **Salle d'Afrique et de Syrie** (magnifique série des mosaïques d'Antioche) de laquelle on descendra dans les deux **Salles d'Antiquités chrétiennes**, sarcophages, inscriptions, mosaïques, (Ier-IVe siècle après J.-C.) d'où l'on passera dans la **Salle d'Auguste**. Dans cette salle et dans la salle voisine, **Salle des Muses** : portraits de l'époque républicaine et du Ier siècle après J.-C., notamment statue d'***Auguste drapé*** (*) bustes d'Agrippa et de Caligula

Les salles : des **Antonins**, de **Septime Sévère**, de la **Paix**, des **Saisons**, nous conduisent de la fin du Ier siècle à l'époque byzantine. Le grand buste d'***Antinoüs***, favori d'Hadrien, plusieurs belles statues d'impératrices drapées, les portraits de ***Caracalla***, le magnifique buste de ***Constantin*** (*) font apprécier l'importance et la qualité de l'art du portrait à l'époque romaine.

Après avoir à nouveau traversé le Vestibule des Prisonniers Barbares, on accèdera au palier inférieur de l'escalier Daru.

Constantin

Avant de monter au premier étage, on peut visiter la **Galerie Daru** et la **Galerie Mollien**, qui prolonge la précédente au-delà du grand vestibule. Ces deux galeries sont décorées de bronzes exécutés d'après l'antique, de sarcophages romains - remarquer le ***sarcophage des Muses*** - et de mosaïques romaines provenant de Syrie. Revenant vers l'***Escalier Daru*** et montant au premier étage, le visiteur pourra admirer, de près le hardi mouvement et la merveilleuse draperie de la ***Victoire de Samothrace*** (*), qui se dresse, animée d'une vie glorieuse, sur un piédestal en forme d'avant de galère.

Victoire de Samothrace

PREMIER ÉTAGE. — A gauche, par la **Rotonde d'Apollon**, on accède à la **Salle des Bijoux**, dont la plus importante richesse réside dans le ***trésor de Boscoréale*** (*), le plus bel ensemble d'argenterie antique qui soit au monde (Ier siècle av. J.-C.) Remarquer en outre les grands ***camées romains***, le grand ***vase d'Emèse***, le Christ et les Apôtres, - IVe siècle après J.-C. -, le ***casque celtique d'Anfreville*** (IVe siècle avant J.-C.).

Pour accéder à la **Salle des Bronzes Antiques**, on entrera dans la **Salle des Sept Cheminées**, d'où l'on passera immédiatement à gauche, dans la **Salle Henri II**, puis dans la **Salle Lacaze**, et l'on traversera le second palier de l'escalier Henri II. Dans le vestibule qui précède la **Salle des Bronzes antiques**, quelques beaux portraits romains ; à l'entrée de la salle, la statue dorée de l'***Apollon de Lillebonne*** - époque romaine. Dans la fenêtre centrale, on admirera la ***tête de jeune homme***, de Bénévent, original grec (fin du Ve siècle avant J.-C.) style de Polyclète (*) ; dans les vitrines plates, miroirs grecs à reliefs ; dans les vitrines près des fenêtres, choix de statuettes grecques et bronzes romains trouvés en Gaule ; dans les vitrines murales, armes, lampes, instruments divers. Au milieu de la salle le plus grand

Tête de Bénévent

bronze archaïque connu, l'***Apollon de Piombino*** (*).

Dans la **Salle des Sept Cheminées**, à l'opposé de la **Salle des Bijoux antiques**, donnent deux galeries parallèles : on commencera par la **Galerie Campana**, celle de droite.

La **Salle A** renferme les céramiques et les terres cuites les plus anciennes : ***vases minoens*** de Crète, ***terres cuites*** et ***vases mycéniens*** de Rhodes et de Chypre - XV•-XII• siècle avant J.-C. -, ***céramique orientalisante*** de Rhodes - VII• siècle avant J.-C. -, grands vases ***géométriques*** d'Athènes - VIII-VII• siècles avant J.-C. - curieusement décorés, cérémonies funéraires, batailles navales.

Salle B. — Terres cuites grecques trouvées en Asie-Mineure ou en Italie : ***urnes étrusques*** décorées de reliefs peints, ***statuettes de Myrina ;*** remarquer les figurines d'***acteurs*** et d'***Eros ailé*** - époque hellénistique -.

Salles C et D. — Céramiques étrusques. Le monument le plus important est le grand sarcophage de Caeré (*) - mari et femme étendus sur un lit, dans une pose étonnamment vivante - VI• s. av J.-C. - ; grandes plaques peintes, avec scènes funéraires.

Salle E. — Vases corinthiens : notamment grands ***cratères*** décorés de scènes à nombreux personnages : défilés, combats, danses bachiques- (*) - vases ioniens notamment ***hydries*** dites de Caeré (*) : légendes mythologiques spirituellement illustrées - grands ***sarcophages de Clazomènes.***

Salle F. — Vases attiques à figures noires - entre 550 et 520 environ -. Les figures se détachent en noir brillant sur fond d'argile ou sur engobe plus clair. Petite vitrine isolée N° 53 ; vase d'Exékias - ***Héraclès et Géryon*** - N° 204 vase d'Andocidès - figures noires d'un côté, rouges de l'autre. Vitrine centrale : vases de Nicosthènes - N°s 116 et 117 - union mystique d'***Héraclès et d'Athéna*** - N° 123 : ***course de voiliers***. Vitrine murale N° 296 : ***Athéniennes à la fontaine.***

Salle G. — Vases attiques à figures rouges - fin du VI• siècle et début du V•. Suivant une technique nouvelle, les figures sont réservées sur le fond d'argile, au milieu du vernis noir. Petite vitrine isolée N° 104 : coupe d'Euphronios - ***Thésée et Athéna chez Amphitrite*** (*) - N° 115 : coupe de Douris - ***Eos relevant le cadavre de son fils Memnon*** (*) - N° 152 : coupe de Brygos - ***scènes de la guerre de Troie*** -. Vitrine centrale : plusieurs beaux vases d'Euphronios et le ***Cratère d'Orvièto*** ; ce vase donne une bonne idée de ce qu'étaient les peintures à fresques du célèbre Polygnote (I•• moitié du V• s. av.J.-C.) d'un côté : ***départ des Argonautes*** ; de l'autre, ***massacre des Niobides***. Vitrine murale N° 197 : ***Crésus sur le bûcher.***

Apollon de Piombino

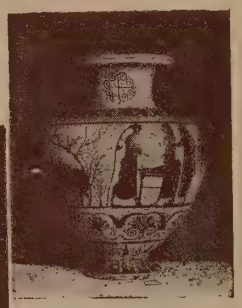
Sarcophage étrusque

Terre cuite grecque. ,Danseuse voilée

Cratère corinthien

Coupe d'Euphronios Thésée chez Amphitrite

Coupe de Douris Eos et Memnon



Hydrie de Caeré

Salle H. — Suite des vases à figures rouges - V• siècle - Vitrines carrées, coupes de Douris : **Grec et porte-étendard perse, Zeus et Héra,** et d'autres peintres de vases célèbres. Au centre, grande vitrine : vases plastiques en forme de têtes humaines ou de têtes d'animaux. Vitrine murale, vers le centre : coupe ***Ajax et Cassandre ;*** au fond, vases rouges, à reliefs dits d'Arezzo - époque romaine -.

Salle des verres. — Les plus beaux verres antiques sont exposés dans les deux petites vitrines isolées : pâtes de verre de couleur, verres peints ou gravés - et dans la vitrine plate de la première fenêtre : miniatures sur verre. Vitrine centrale : belle collection de verres irisés, de formes variées. Vitrines murales ***fresques de Pompéï*** et d'***Herculanum ;*** au fond ***portraits peints*** sur bois, et ***bustes de plâtre*** peints, provenant d'Egypte. Dans le renfoncement, deux fragments de ***stèles funéraires*** grecques décorées de peintures - IV• siècle av. J.-C. -.

Le visiteur reviendra sur ses pas jusqu'à la **Salle E**, traversera la grande **Salle Egyptienne,** et entrera, à gauche, dans la **Salle M** : céramiques et terres cuites grecques d'Asie-Mineure. Remarquer les terres cuites de Smyrne - figurines grotesques et statuettes inspirées de la grande sculpture -.

Salle L. — Vases et terres cuites provenant de la Grèce propre. Dans les vitrines murales, ***lécythes à fond blanc*** et peintures polychromes - scènes funéraires - ; ***terres cuites de Tanagra***, peintes avec rehauts d'or ; notamment une ***danseuse voilée*** (*). Vitrine centrale : plaquettes à relief de Milo ; petites ***coupes à fond blanc*** : jeunes femmes jouant de la lyre ; au milieu, grande amphore de Milo : ***combat des dieux et des géants*** -.

Salle K. — Céramique italiote. Le décor de ces vases - imitation de la céramique attique - est d'exécution médiocre, mais les sujets sont fort intéressants - scènes funéraires et surtout représentations empruntées au répertoire théâtral -.

Salle de Clarac. — Petits marbres ou fragments. Bois peints provenant de Crimée : notamment - Vitrine F - : ***statuette d'Alexandre.***

J. CHARBONNEAUX,
Conservateur-Adjoint
du Département des Antiquités Grecques et Romaines.

Photos : Arch. Photogr. d'Art et d'Histoire - Paris

⑨ OBJETS D'ART

ACCÈS : PORTE DENON

En haut de l'Escalier Daru pénétrer à gauche dans la Galerie d'Apollon

Le département des Objets d'art du Louvre, actuellement en pleine réorganisation, se trouve provisoirement réparti en divers endroits du Musée ; de ce fait, une visite continue est rendue assez difficile.

La **Galerie d'Apollon** présente au public les séries d'orfèvrerie, d'émaux de gemmes et de bijoux. Parmi les pièces les plus anciennes et les plus remarquables, il faut signaler les objets provenant du Trésor de Saint-Denis (vitrine à gauche de la fenêtre donnant sur la Seine), notamment la fameuse ***Patène en serpentine*** incrustée de poissons d'or, dont le bord est couvert de pierreries ; cet objet de l'époque carolingienne précède de peu la ***Boîte d'évangéliaire*** ornée d'une crucifixion et des symboles des évangélistes en émail cloisonné ; citons encore ***trois vases*** en pierre dure [1], montés en orfèvrerie au XIIe siècle ; leurs inscriptions rappellent qu'ils furent donnés par Suger, ministre de Louis VII, à l'Abbaye de Saint-Denis.

1 — *Vases du Trésor de St-Denis*

Dans une vitrine plate des fenêtres (la troisième en venant de la Rotonde), on voit les reliques émouvantes du Sacre des Rois de France : la magnifique ***Épée*** à la poignée d'or [2] qu'on appelle improprement épée de Charlemagne, ciselée à l'époque romane ; depuis lors tous les Rois l'ont portée le jour du Sacre à Reims et on la voit reproduite constamment sur le portrait de Louis XIV en grand costume par Rigaud ; auprès d'elle on peut voir encore les ***Éperons,*** la ***Main de justice,*** le ***Sceptre,*** l'***Agrafe du manteau*** qui servaient aussi en cette seule occasion.

2. — *Epée de Charlemagne*

3. — *Vierge d'Evreux*

Les émaux byzantins cloisonnés sur or, comme le médaillon figurant ***Saint Démètrios*** (Xe s.), les émaux champlevés de la Meuse, comme l'épaulière figurant la ***Résurrection*** (XIIIe siècle), les émaux champlevés rhénans, comme la plaque sur fond bleu figurant ***Ezéchiel*** (XIIe s.), sont représentés par quelques très belles pièces (première vitrine des fenêtres) ; l'émaillerie limousine montre au visiteur une quantité d'objets divers dont quelques-uns sont célèbres : la plaque figurant la ***Crucifixion*** (première vitrine des fenêtres) sur fond doré à décor de rinceaux gravés, ou bien la châsse figurant la ***Mort de la Vierge*** (deuxième vitrine centrale).

5. — *Plat de Faënza*

L'orfèvrerie gothique, en outre de ses nombreux reliquaires en forme d'architecture, montre un de ses monuments les plus remarquables dans la ***Vierge reliquaire*** (dernière vitrine centrale), statue en vermeil dont le socle porte des émaux translucides [3] ; elle fut donnée en 1339 à l'Abbaye de St-Denis par la reine Jehanne d'Evreux, veuve de Charles IV le Bel.

Les émaux peints à Limoges pendant la Renaissance sont très nombreux. Les premiers émailleurs nous sont mal connus malgré les beaux ensembles qui nous restent de la fin du XVe siècle et du début du XVIe siècle, comme les douze plaques figurant des ***Scènes de la Passion*** (dernière vitrine murale) attribuées au prétendu Monvaerni. Au XVIe siècle le plus célèbre des peintres émailleurs est Léonard Limousin qui réussit mieux qu'aucun autre les portraits de cour : celui du ***Connétable de Montmorency*** [4] avec un encadrement à l'emblème de sa charge (cinquième vitrine murale) est peut-être le plus beau qu'il ait jamais exécuté. Il faudrait encore citer Pierre Reymond, dont la ***vaisselle émaillée*** en noir et blanc est très caractéristique (avant-dernière vitrine murale). On verra l'importante collection de ***Vases en pierre dure*** (grandes vitrines centrales) cristal de roche, agate, onyx ; ces objets figurèrent pour la plupart dans les collections de Louis XIV. Le Trésor des diamants de la couronne (vitrine centrale) contient le fameux ***Régent*** (137 carats) acquis en 1717 sous la minorité de Louis XV ; il orna successivement les couronnes du Sacre de Louis XV et de Louis XVI, l'épée du 1er Consul et le diadème « à la grecque » de l'Impératrice Eugénie.

4. - *Connétable de Montmorency*

Lorsqu'on pénètre dans les **Salles de la Colonnade** *, on traverse trois pièces décorées de boiseries, contenant l'une des ***bronzes de Barye,*** la seconde des meubles de la ***Renaissance*** et la troisième des armes, dont la plus magnifique est ***l'armure de Henri II.*** Au mur se voient des tapisseries de la série des ***Douze chasses de Maximilien,*** tissées d'or, exécutées à Bruxelles au XVIe siècle.

La **Salle de la Céramique italienne** présente un ensemble imposant de majoliques des XVe et XVIe siècles. Citons parmi les pièces essentielles : le ***Plat de Faënza*** (petite vitrine centrale) figurant ***La Cène*** [5] et le ***Plat de Deruta*** à reflets métalliques (grande vitrine murale du fond) décoré de ***Guerriers portant des étendards*** [6]. Les autres ateliers italiens : Caffagiolo, Gubbio, Castel-Durante et notam-

6. — *Plat de Deruta*

Ces salles où s'effectuent les premiers travaux de réorganisation du département sont provisoirement fermées au public.

7. — Le Gnôme à l'escargot

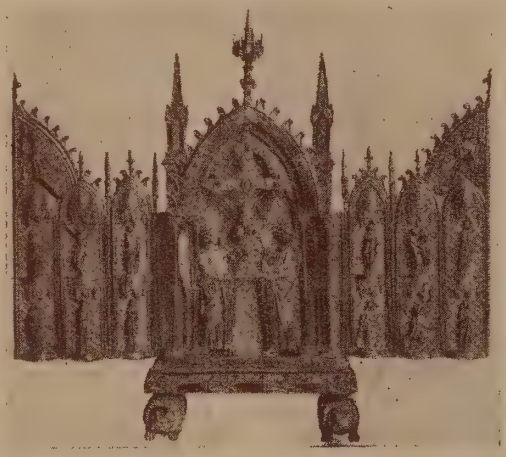
9. — Tapisserie de la Vierge Glorieuse

8. — L'amour musicien

ment **Urbino** (grande vitrine murale de droite), sont aussi admirablement représentés.

La **Salle des Bronzes** contient un grand nombre de statuettes, plaquettes et médailles de la Renaissance italienne. La pièce la plus ancienne et la plus rare est la ***statuette équestre de Charlemagne*** (petite vitrine au centre) provenant du trésor de la Cathédrale de Metz. Il est difficile d'identifier son origine, et l'on ne peut affirmer si l'objet est byzantin ou carolingien ; mais il n'en est pas moins précieux par son antiquité et sa rareté. La vitrine placée devant la fenêtre centrale contient les statuettes les plus remarquables de la Renaissance italienne (XV• siècle). Citons le ***Saint Jean-Baptiste*** de Donatello, le ***Saint Jérôme*** de Bellano, la statuette équestre du ***Marquis de Mantoue*** par Sperandio, et les ***figures*** de Riccio qui résument la fantaisie fine et charmante des années 1500 à Padoue. Les deux œuvres les plus attrayantes de cette période sont présentées isolément dans de petites vitrines : ce sont le ***Gnôme à l'Escargot*** [7], chef d'œuvre de l'école padouane et l'***Amour musicien*** [8], ébauche admirable de l'école de Donatello. Les deux autres grandes vitrines contiennent des œuvres plus tardives, mais dont quelques-unes sont cependant d'un style admirable comme la ***Négresse nue,*** œuvre de l'Italie du Nord au début du XV• siècle.

10. — Plat de Bernard Palissy



12. — Polyptyque de Floreffe

Le mur est orné de plusieurs tapisseries du Moyen Age et de la Renaissance; parmi les premières, le triptyque de la ***Vierge glorieuse*** [9], daté de 1485, est peut-être la plus remarquable de ces pièces flamandes dont l'éclat et la fraîcheur sont d'une somptuosité éblouissante. Citons encore ***Saint Luc peignant la Vierge,*** et la grande tapisserie du ***Jugement dernier,*** exécutées à Bruxelles au début du XVI• siècle.

13. — Triptyque Harbaville

Dans la **Salle des Faïences Françaises,** les céramiques du XVI• siècle sont représentées par l'importante série des œuvres de ***Bernard Palissy***, célèbre surtout par ses ***rustiques figulines,*** objets à décor moulé sur la nature même : poissons, reptiles, crustacés, plantes aquatiques et coquillages. Plusieurs pièces [10] nous montrent ce procédé. Du XVI• siècle encore les quelques rarissimes productions de l'atelier de ***Saint Porchaire,*** à décor incrusté sur fond blanc. Pour Nevers, signalons le grand plat du XVII• siècle : ***l'Enlèvement d'Europe*** [11]. Rouen, offre quelques beaux spécimens du style dit rayonnant. Moustiers, Sceaux et Marseille figurent avec honneur dans les autres vitrines.

11. — Plat de Nevers

La Salle contenant la ***donation du Baron Adolphe de Rotschild,*** somptueusement aménagée, contient en outre de ses deux vitrines d'orfèvrerie, une des pièces les plus fameuses du XIII• siècle : le ***polyptyque de Floreffe*** [12], importante œuvre d'orfèvres mosans.

La **Salle des Ivoires** réunit des pièces sculptées depuis l'antiquité romaine jusqu'au XVI• siècle. Une des œuvres les plus célèbres de tout l'art byzantin est le ***triptyque Harbaville*** [13] qui date du X• siècle (vitrine murale de droite). On y remarque le style précis et conventionnel des monuments de cette époque, mais le revers orné d'un paysage symbolique est d'une grâce toute particulière. Les importants ivoires carolingiens s'effacent devant le charme des groupes du XIII• siècle (vitrine centrale) tels que le ***Couronnement de la Vierge,*** la ***Descente de Croix*** et la fameuse ***Vierge*** [14] provenant du trésor de la

14. — Vierge de la Ste Chapelle

Photos : Arch. Photogr. d'Art et d'Histoire - Paris

15. — Bahut de Hugues Sambin

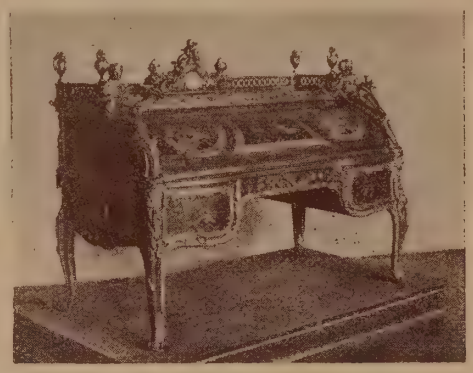
Sainte Chapelle dont l'élégance légèrement maniérée accuse le début du XIVe siècle. Admirons encore les autres œuvres gothiques (vitrine murale de gauche) : statuettes, diptyques, polyptyques et plaquettes qui montrent la maîtrise des artistes parisiens dont l'esprit léger et gracieux transparaît dans les valves de miroir (vitrine dans la fenêtre). Ces petits ouvrages, malgré leurs dimensions restreintes, évoquent la sculpture des grandes cathédrales. Dans cette salle il faut voir encore quelques belles tapisseries, dont l'une française, du style très caractéristique de la fin du XVe siècle : elle figure, sur un fond sombre semé de fleurettes, des personnages richement vêtus exécutant un **Concert champêtre.**

16. Régulateur de Martin-Carlin

Le ***legs de la Marquise Arconati-Visconti*** groupe dans une salle des œuvres diverses de la Renaissance. Parmi les céramiques italiennes, les bronzes et les meubles, signalons surtout Le grand ***bahut bourguignon*** [15] attribué à Hugues Sambin ; il est un des spécimens les plus remarquables du mobilier français du XVIe siècle caractérisé par une ornementation surchargée mais d'un travail délicat plein de fantaisie.

On atteint les **Salles du Mobilier,** après avoir traversé quelques salles de peintures françaises et anglaises. Dans leurs dispositions actuelles, ces salles commencent par l'époque de Louis XVI pour finir par celle de Louis XIV. Dans la première salle, les ébénistes tels que Riesener, Benemann, Martin-Carlin sont à l'honneur. De celui-ci, le grand ***Régulateur*** [16] orné de magnifiques bronzes dorés ciselés par Gouthière, semble particulièrement remarquable. Il faut encore voir du même ébéniste, les ***encoignures*** et les autres meubles laqués noir provenant du château de Bellevue et exécutés pour Mesdames, filles de Louis XV. Le style de Benemann, plus lourd et plus chargé, se distingue aisément dans les ***grands meubles de salle à manger*** somptueusement ornés de bronzes dorés. Dans la salle suivante le lit de style Louis XVI est orné d'un merveilleux tissu exécuté par Philippe de la Salle à Lyon vers 1780. On verra également une vitrine de tabatières, précieux petits objets d'orfèvrerie qui montrent le goût et l'ingéniosité des artistes pour monter des miniatures, des gouaches ou des pierres précieuses.

Dans la grande salle du mobilier, on remarquera surtout le célèbre ***Bureau du Roi*** [17] qu'Œben et Riesener exécutèrent pour Louis XV ; ce grand meuble de marqueterie, avec ses sculptures en bronze par Duplessis, est incontestablement le chef-d'œuvre du mobilier français de toutes les époques. Cette salle contient encore des meubles de l'époque de Louis XV, signés de noms tels que Cressent ou Migeon, et des tapisseries des Gobelins du XVIIIe siècle dont les plus remarquables sont les fameuses ***tentures de Boucher*** [18] sur fond damassé rose avec alentours de fleurs. Une vitrine contient un des chefs-d'œuvre de l'argenterie française : la ***soupière*** provenant du service commandé à Roettiers par Catherine II pour son favori Orloff, et exécuté à Paris de 1770 à 1774 ; les ***deux flambeaux*** qui l'accompagnent ont la même origine.



17. — Bureau du Roi Louis XV

18. — Tapisserie d'après Boucher

19. — Armoire de Boulle

20. Pendule des Trois Grâces de Falconet

La Salle de l'époque de Louis XIV montre quelques beaux meubles de Boulle, dont deux ***grandes armoires*** [19] incrustées d'écaille, de cuivre et d'étain. Une tapisserie splendide : ***Moïse sauvé des eaux,*** d'après Simon Vouet, exécutée à Paris avant la fondation des Gobelins, orne l'un des murs.

Il ne faut pas manquer, pour compléter la visite du mobilier, d'aller voir les salles où l'on a groupé le ***legs du Comte Isaac de Camondo.*** On peut y admirer une importante série de faïences françaises, des sièges magnifiques provenant de la chambre du Roi Louis XV à Versailles ; mais il faut surtout signaler la tameuse ***pendule des Trois Grâces*** [20], attribuée à Falconet et datant du début de l'époque de Louis XVI.

Georges FONTAINE,
Conservateur-Adjoint
du département des Objets d'Art

⑩ ARTS DE L'ASIE

1° ORIENT MUSULMAN

Salle Delort de Gléon

Acces par le Pavillon de Sully.
Escalier Henri II Second Etage

En 1919, les collections d'art musulman, jusqu'alors dispersées à travers différentes salles du Musée, ont été groupées et logées sous la haute coupole du **Pavillon Sully** - dit de l'Horloge - qui domine le Louvre des Valois.

Ces collections nous présentent, dans leur merveilleuse diversité, l'activité de la culture islamique qui, née en Arabie au début du VII° siècle (an I de l'Hégire - 621) a depuis lors poussé sa croissance à travers trois continents, et a maintenu, des Indes jusqu'en Espagne et sur les pourtours du bassin méditerranéen, des ateliers de céramistes, de bronziers, de tisserands, d'enlumineurs, de verriers, d'orfèvres et de sculpteurs sur pierre, stuc, bois, ivoire ou cristal de roche.

2. — *Aiguière cristal de roche*

On y retrouve la tradition d'un monde échu : celui de la Perse achéménide et sassanide de l'Egypte, de la Grèce ou de Rome, ainsi que les influences d'un monde contemporain : le monde chrétien qui borde l'Islam au Nord et à l'Ouest, le monde boudhique et chinois qui l'avoisine au Sud et à l'Est.

La série des poteries évoque avec éclat la multiplicité de cet art. Sur le palier qui précède l'entrée, une vitrine expose les fragments de céramique trouvés à Suse; ils datent du début de l'hégire ou de l'âge qui l'a immédiatement précédé.

Dans six des vitrines de la grande salle, disposées le long des fenêtres qui regardent le Carrousel, nous suivons le développement de cet art de la céramique en Perse, Mésopotamie, Syrie, Egypte, du IX° au XIV° siècle.

6. — *Danseuse T'ang*

Si l'on tourne à main droite en débouchant de l'escalier, on voit les plats ou les pièces de forme dits « de Damas [1], de Kutayeh ou de Rhodes, séries qui furent toutes trois fabriquées à Nicée en Asie Mineure aux XVI° et XVII° siècles.

A main gauche se déploie la longue vitrine des plats hispano-mauresques des XV°, XVI° et XVII° siècles.

1. — *Plat de Damas*

Dans la vitrine centrale, nous signalons les lampes de mosquée en verre émaillé, travail égyptien ou syrien des XIV° et XV° siècles, une aiguière [2] et un calice en cristal de roche taillé et gravé, art égyptien du X° siècle, qui tous deux proviennent du trésor de St-Denis ; enfin des coffrets en ivoire sculpté [3], art omeyiade d'Espagne du IX° siècle.

Parmi les bronzes rehaussés d'argent gravé, on remarque un grand bassin, dit **« bassin de Saint-Louis »** [4] - art mésopotamien du XIII° siècle - qui fut, jusqu'à la Révolution, dans le trésor de la chapelle royale de Vincennes, où il servait de baptistère aux enfants de la famille de France.

4. — *Bassin de St-Louis*

Au mur sont suspendus quelques tapis de soie et de laine, dont une longue carpette, ouvrage persan du XVI° siècle [5], provenant de l'Eglise de Mantes. Les scènes qui y sont si magistralement représentées répètent celles dont les enumineurs ont enrichi les manuscrits, comme on peut le voir dans les vitrines plates ou aux murs de la **Salle Delort de Gléon**.

3. — *Coffret arabe*

5. — *Tapis persan*

2° EXTRÊME-ORIENT

Porte Barbet de Jouy. Entresol

Les collections extrêmes-orientales, actuellement exposées, comprennent trois sections nettement séparées l'une de l'autre.

La première, et de beaucoup la plus riche, présente les collections de céramique réunies et données au Musée par Ernest Grandidier. Cet ensemble est justement célèbre. A la suite des séries spéciales et des séries japonaises rangées sur le palier et dans la première salle, le visiteur parcourt toutes les familles de terres émaillées et de porcelaines chinoises, classées selon leur technique et leur âge depuis les dynasties T'ang - 618-906 - [6] - Song 936-1279 - Yuan 1279-1368 - et Ming 1368-1644 [7] jusqu'aux règnes des souverains de la dynastie Ts'ing 1644-1911 : Kang-Hi - Young-tcheng - Kieng-long et Tao-Kouan.

7 — *Vase chinois*

Photos : Arch. Photogr. d'Art et d'Histoire - Paris

8. — *Sculpture du Gandhara*

La seconde section comprend le butin ramené d'Asie Centrale par deux missions, celle de Foucher au Gandhara (N.-O. de l'Inde) sculptures de l'art gréco-boudhique des Ier et IIe siècles de notre ère [8] ; celle de P. Pelliot en Turkestan chinois : sculptures de terre séchée, peintures [9], objets divers des VIIIe et IXe siècles de notre ère, recueillies pour la plupart à Touen-Houang.

La troisième section expose quelques-unes des pièces appartenant aux collections chinoises du département : vases de l'époque cénéolithique, dont certains datent peut-être du troisième millénaire avant notre ère : céramique Hou - 206 av. J.-C. - 220 ap. J.-C. - sculptures Wei [10] - VIe siècle, os et jades sculptés et gravés, miroirs de bronze, de l'époque Han à l'époque Song.

10. — *Statuette bouddha*

9. — *Peinture Touen-Houong*

Le reste des collections chinoises et les collections japonaises non exposées trouveront place dans l'installation projetée, qui assurera le groupement de toutes les collections du département des Arts Asiatiques.

Georges SALLES,
Chargé du Département des Arts Asiatiques

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(11) ANTIQUITÉS ORIENTALES

Accès { Porte Henri IV. / Porte St-Germain-l'Auxerrois.

Le département, inauguré en 1847, groupe les anciens monuments de la partie Ouest de l'Asie, et ceux de certains pays ayant subi la forte influence de l'Orient (Chypre, Carthage et péninsule ibérique). La majeure partie des collections provient des grandes fouilles françaises de E. Botta à Khorsabad (Assyrie); E. de Sarzec à Tello (Basse-Mésopotamie); J. de Morgan à Suse (Sud-Ouest de la Perse).

En raison des diverses provenances des monuments, les collections ont été disposées par régions géographiques; dans chaque série, l'ordre chronologique a été, autant que possible, respecté.

La Mésopotamie fut occupée d'abord par les Sumériens, puis par les Sémites qui adoptèrent la civilisation sumérienne. Pendant le IIIe millénaire avant notre ère, prédominent la monarchie sémitique originaire d'Agadé (partie haute de la Mésopotamie), la IIIe dynastie sumérienne d'Our, du nom de la capitale, située en Sumer.

Au IIe millénaire vient la première dynastie de Babylone, sémitique. Ensuite la dynastie étrangère des Kassites occupe le pays pendant près de 8 siècles ; en Asie-Mineure s'élève l'Empire des Hittites.

Au Ier millénaire, royaumes d'Israël et de Juda en Palestine, hégémonie assyrienne de la dynastie des Sargonides - VIIIe-VIIe siècle -. En 612 les Babyloniens détruisent Ninive; leur empire s'écroule à son tour sous les coups des Perses Achéménides - 538 -. Conquête de l'Orient par Alexandre (330).

Nous commencerons la visite en partant de la Porte Henri IV.

2. — *Stèle de Naram-Sin*

1. — *Statue de Goudéa*

4. — *Chapiteau de Suse*

Salle de Sumer ou Salle de Sarzec. — Monuments archaïques de Sumer : En vitrines : bas-reliefs du roi Our-Nanshé et de sa famille; tête de taureau en cuivre; vase d'argent d'une seule pièce du roi Entéména - vers 2760 av. J.-C.; fragments remontés de la ***Stèle des Vautours*** représentant, sur une face, le dieu victorieux, sur l'autre, une campagne militaire - vers 2825 - avant J.-C.

Statue assise d'un personnage en albâtre, aux yeux incrustés de lapis-lazuli (époque de la Stèle des Vautours), venant de Hariri, l'ancienne Mari près d'Abou-Kémal. Plus loin, en vitrine, statuettes et incrustations de nacre de Mari.

Salle Néo-Sumérienne ou Salle Cros. — Statues de diorite du prince Goudéa de Tello, vers 2400 av. J.-C. - statues mutilées lors d'une invasion. Remarquer la petite ***statue assise de Goudéa*** (entière) [1] aux proportions écourtées ; la statuette mutilée de son fils Our-Ningirsou.

A la paroi : Fresque provenant de Hariri. En vitrines: vase à libation ; masse d'armes votive de Goudéa.

Salle d'Agadé et d'Eshnounna. — ***Stèle de Victoire du roi Naram-Sin*** - vers 2650 - poursuivant ses ennemis [2]. Statuettes de princes de la ville d'Eshnounna.

Salle de Babylone et de Larsa. — Au centre, le « ***Code*** » ***de Hammourabi*** sur lequel ce monarque fit inscrire ses lois [3] - vers 2000 -. Au sommet du monument, le roi se tient debout devant le dieu soleil.

3. — *Code de Hammourabi*

Statuettes en bronze rehaussé d'or d'un fidèle en prière et d'un groupe de trois bouquetins dressés; époque de Hammourabi (Larsa).

Au mur, un des lions en briques émaillées qui ornaient les murailles de Babylone (VIe siècle avant J.-C.).

Le visiteur traverse deux salles en remaniement pour atteindre les Salles III, IV, V, de Suse (**Salles I, II, III, Dieulafoy**). Dans la Salle I, ***chapiteau de colonne*** (palais d'Artaxerxès II - 405-362 - à Suse), fait de deux avant-trains de taureaux supportant les poutres de la toiture [4].

7. — Céramiques de Suse antérieures à 3.000 av. J.-C.

Dans ces trois salles, aux murs, panneaux en briques émaillées du même site : lions, ou archers de la garde du roi de Perse

En vitrines : cylindres-sceaux servant de cachets et leurs empreintes. — Bijoux d'or, émaux et pierres. — Anse de vase en forme de bouquetin ailé, en argent incrusté d'or.

Salle de Perse, consacrée aux monuments venant d'autres sites de Perse : Tépé-Giyan, près Néhavend et Kashan.

Descendre l'escalier menant au sous-sol.

5. — Sarcophage d'Eshmounazar

Crypte aux sarcophages. — On y remarquera le ***sarcophage en amphibolite noire*** [5], égyptien, mais à épitaphe phénicienne, où fut inhumé Eshmounazar, roi de Sidon - Ve siècle av. J.-C. — Les sarcophages de cette salle - Ve et IVe siècles av. J.-C. - proviennent de la côte phénicienne : régions de Sidon, Tripoli.

Salle Palmyrénienne. — L'oasis de Palmyre, entre Homs et l'Euphrate, fut un centre commercial important aux IIe et IIIe siècles de notre ère. Les bas-reliefs exposés, jadis placés sur les tombeaux, sont de cette époque.

Remonter l'escalier pour atteindre la **Deuxième Salle de Morgan** renfermant des antiquités de Suse. Au milieu, buste de la « ***Dame d'Elché*** » [6] (Elché près d'Alicante) d'après le lieu de la découverte, monument d'art ibérique (début du IVe siècle av. J.-C.) sous l'influence orientale.

Dans cette salle, s'ouvre la **Salle Ibérique.** Les monuments de cette petite salle portent la double influence de l'Orient et de la Grèce : sphinx, bas-relief représentant un cavalier, des personnages en buste.

Dans la **Première Salle de Morgan**, du côté de la cour du Louvre, deux vitrines (A et C) contiennent une fine céramique peinte, antérieure à 3000 avant notre ère [7].

Salle phénicienne et chypriote. — Aux murs, bas-reliefs phéniciens, statues votives de Chypre; au centre, l'énorme vase d'Amathonte, taillé dans un seul bloc, destiné à la réserve d'eau lustrale d'un sanctuaire.

Le Vestibule de l'Escalier asiatique contient provisoirement la statue en bronze de Napir-Asou, reine d'Elam (vers 1500 av. J.-C.).

A l'extrémité du Vestibule de l'Escalier Asiatique s'ouvrent :

La **Salle Judaïque:** sarcophages du début de l'ère chrétienne, et Stèle de Mésa, roi de Moab - vers 842 av. J.-C. - qui rapporte des événements connus par l'Ancien Testament (II Rois-III).

La **Salle d'Epigraphie Punique** est consacrée surtout aux inscriptions en langue punique (carthaginois).

6. — Dame d'Elché

Le Vestibule donne accès à la **IIe Salle Assyrienne et Hittite.** — Aux murs, bas-reliefs provenant du palais de Khorsabad (voir la salle suivante). En vitrines, ivoires qui ornaient la litière de Hazaël, roi de Damas (IXe siècle av. J.-C.).

8. — Taureau ailé à face humaine

Galerie Assyrienne. — Aux parois : bas-reliefs du palais que Sargon II d'Assyrie - 722-705 - fit construire à Khorsabad près de Ninive. Ils représentent : 1° la vie de la Cour; 2° des génies protecteurs du palais, notamment les ***taureaux ailés à face humaine*** [8].

La suite des bas-reliefs assyriens est disposée dans l'escalier conduisant sous le Guichet Saint-Germain-l'Auxerrois.

Les antiquités de la Susiane, de Phénicie et de Chypre seront réparties dans les salles actuellement en remaniement.

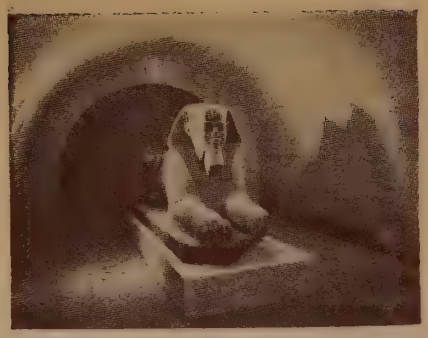
G. CONTENAU,
Conservateur des Antiquités Orientales

RÉSUMÉ CHRONOLOGIQUE DE L'HISTOIRE DE L'ASIE OCCIDENTALE ANCIENNE

Avant J.-C.	MÉSOPOTAMIE ET PERSE *Sumer - Babylonie - Assyrie*	CANAAN *Syrie - Palestine*	ASIE-MINEURE
Avant 3000	Civilisation caractérisée par l'usage de la céramique peinte		
Vers 2900	Ire dynastie d'Our (Princes sumériens de Lagash, vers 2850).	Vers 2950 : Les Pharaons à Byblos.	
Vers 2725	Dynastie sémitique d'Agadé		
Vers 2500	Invasion des Gouti (Goudéa vers 2400)		
Vers 2350	IIIe dynastie d'Our (sumérienne)		
Vers 2100	Ire dynastie de Babylone (Hammourabi vers 2000)	Tombes de Byblos contemporaines de la XIIe dynastie égyptienne (v. 1800).	
Vers 1750	Dynastie Kassite venue d'Elam	XIIIe siècle. Tombe d'Ahiram de Byblos.	Grand Empire hittite
Vers 900	Empire assyrien (Les Sargonides, VIIIe-VIIe siècle)	Empire hittite de Haute Syrie.	
612-539	Empire néo-babylonien		
538-330	Les Perses Achéménides	Ve siècle. Eshmounazar, roi de Sidon.	

Photos : Arch. Photogr. d'Art et d'Histoire - Paris

2. — Salle du Mastaba.



1. — Le Sphinx colossal de Tanis.

4. — Salle des grands monuments de l'Ancien Empire.

(12) ANTIQUITÉS ÉGYPTIENNES

ENTRÉE : PORTE DES ARTS
— soit par le *Quai du Louvre*
— soit par la *Cour Carrée* — à gauche après avoir passé la Porte Saint-Germain-l'Auxerrois.

REZ-DE-CHAUSSEE. — Du Département des Antiques, un passage souterrain — dans lequel ont été présentés un ***Sphinx colossal*** en granit rouge (A 23), provenant de Tanis [1], et le ***zodiaque*** circulaire du temple de Denderah — conduit aux salles égyptiennes du rez-de-chaussée, classées suivant un ordre rigoureusement chronologique.

Dans le vestibule, colosse en grès du roi Sethôsis II (XIXe dynastie). On tourne à droite, dans une salle [2] où a été reconstitué ***le Mastaba*** du haut fonctionnaire ***Akhouthotep*** (V^e dynastie), ou, plus exactement, ***la chapelle*** de ce mastaba, c'est-à-dire la partie accessible de celui-ci, où les simples passants, tout aussi bien que les prêtres et la famille, pouvaient venir faire à tous moments l'offrande au ***double;*** des bas-reliefs peints, sculptés sur les parois intérieures de cette chapelle, faisaient, en outre, revivre pour le mort les principaux épisodes de sa vie terrestre.- ***Le mastaba,*** toujours ***édifié au-dessus du sol,*** est la tombe ***memphite*** propre aux ***particuliers*** sous l'***Ancien Empire*** (à cette même époque, la tombe ***royale*** est ***la pyramide***); il s'oppose à ***l'hypogée,*** tombe ***souterraine,*** employée exclusivement, au contraire, à partir de l'époque ***thébaine,*** aussi bien pour les rois que pour les particuliers.

5. — Le Scribe accroupi.

Salle archaïque - Monuments antérieurs à la IVe dynastie -. — ***Stèle du Roi Serpent*** [3], provenant de la tombe d'un roi thinite; elle tire son appellation du serpent dont l'image sert à écrire le nom de ce roi.

3. — La Stèle du Roi Serpent.

Salle des grands monuments de l'Ancien Empire. — Statues et bas-reliefs trouvés dans les mastabas memphites; trois colonnes à chapiteau en feuille de palmier, ayant fait partie de temples funéraires royaux. Au milieu de la salle, ***sarcophage d'Abou-Roasch,*** dont la décoration extérieure imite celle d'une façade de palais [4].

Salle des petites sculptures de l'Ancien Empire. — Au centre, le célèbre ***Scribe accroupi,*** en calcaire peint [5], trouvé par Mariette à Sakkarah (V^e dynastie); dans les vitrines murales, œuvres de petite statuaire et vaisselle d'albâtre.

Salles du Moyen Empire (Ire époque thébaine). — Dans la première, sur le mur de gauche, bas-relief en calcaire, représentant le roi ***Sesostris III faisant l'offrande au dieu Montou*** (XIIe dynastie); dans la seconde, grande statue, en bois peint, du chancelier ***Nakhti*** (IXe-X^e dynasties); dans la dernière, ***portique*** à colonnes papyriformes fasciculées [6] provenant du temple de ***Médamoud*** (Haute-Egypte).

Des armoires ménagées dans les murs de ces trois salles font particulièrement ressortir la beauté d'œuvres comme la ***grande porteuse d'offrandes*** de Siout (2e salle), ou l'intérêt des ***barques mystiques*** sur lesquelles le mort était censé effectuer le voyage aux sanctuaires osiriens (fenêtre de la 3e salle).

Les salles du Moyen Empire se continuent par la **Salle d'Alger,** longue galerie contenant les stèles et autres monuments épigraphiques, ménagée parallèlement à la **Salle Henri IV.**

Dans celle-ci sont conservés les grands monuments : statues, sarcophages en pierre, naos, etc., de la ***seconde époque thébaine*** et de ***l'époque saïte,*** entre autres un groupe de quatre ***cynocéphales,*** qui formait l'un des côtés de la base de ***l'obélisque de Luxor*** (D-31), et ***la cuve du sarcophage de Ramsès III,*** décorée de scènes relatives au voyage nocturne de la barque du soleil dans la région inférieure. Au milieu de la salle, sur le

6. — Portique de Médamoud,

7. — Le roi Sethôsis Ier et la déesse Hathor.

mur est, ***bas relief de Séthôsis Ier et de la déesse Hathor*** [7].

Au sortir de la salle, on entre, à droite, dans la ***Salle des époques saïte et grecque*** [8]; les sphinx disposés en allée ont été retrouvés par Mariette dans le ***Serapeum de Memphis,*** sépulture des taureaux sacrés Apis.

Les deux dernières salles, consacrées à l'art de l'Egypte chrétienne (art **copte**), et de l'Egypte byzantine, contiennent surtout des fragments architecturaux et des objets provenant du ***monastère de Baouït*** (VIe siècle après J.-C.); au milieu de la seconde salle, chapiteau du type dit « en corbeille ».

PREMIER ÉTAGE. — On revient sur ses pas, jusqu'au pied d'un grand escalier (***Escalier Egyptien***), par lequel on accède aux ***salles du premier étage.***

Première Salle. — Salle funéraire. — ***Vitrine centrale :*** sarcophages à représentations. ***Armoires murales :*** masques de sarcophages, appuitêtes (appelés ***chevets***) et stèles funéraires en bois (A); statuettes funéraires et coffres ayant contenu celles-ci (B et C); sarcophages (D). Dans une vitrine isolée, quatre ***canopes*** (vases dans lesquels on enfermait les viscères du mort), aux cartouches de Ramsès II (XIXe dynastie).

Deuxième Salle. — Salle des Bijoux et des Bronzes. — ***Vitrine centrale : Bijoux*** trouvés par Mariette dans une chapelle du ***Serapeum*** (colonnette en feldspath vert, ***pectoraux en or cloisonné***, bague avec reproduction d'un char).

Dans des vitrines entourant la vitrine centrale : ***Tête royale en bois*** [9] (pièce de couronnement d'une harpe) représentant Amenophis IV ou l'un des membres de sa famille ; ***statue de la Reine Karomama*** (XXIIe dynastie), en bronze damasquiné d'or. ***Armoires murales*** : bronzes de dieux (à forme humaine ou animale) et d'insignes divins. ***Vitrines d'angle*** : Bronzes civils, chats et faucons, porteurs d'offrandes, bronzes à sujets rares.

Troisième Salle. — Salle de la petite statuaire postérieure au Moyen Empire. — On peut y suivre le long développement de cette statuaire, caractérisée d'abord. à la ***seconde époque thébaine,*** par un ***idéalisme*** de plus en plus stylisé, puis, à ***l'époque saïte*** (souvent appelée, pour cette raison, ***époque néo-memphite***), par une tendance ***archaïsante*** qui s'essaie à faire revivre le réalisme expressif de l'Ancien Empire.

Au centre, ***buste en calcaire*** du roi Amenophis IV-Akhounaton [10], retrouvé dans l'atelier du sculpteur Thoutmôsis à El-Amarna (XVIIIe dynastie). Dans une vitrine isolée : charmante statuette en bois de la ***prêtresse Toui*** [11] attachée au harem du dieu Min, de Thèbes (IIe époque thébaine).

8. — *La Salle des Sphinx.*

9. — *Tête d'El Amarna.*

11. — *La prêtresse Toui.*

Sur les murs sont exposés de grands exemplaires, sur papyrus, du ***Livre des Morts*** (rituel funéraire roulé qu'on plaçait à côté du défunt); une vignette de l'un de ces exemplaires - à gauche de la cheminée - (registre du bas du papyrus N° 3072) montre ***la pesée du cœur du mort*** en présence du dieu Osiris.

Quatrième Salle. — 1re Salle du Mobilier funéraire. — Salle des vases en pierre, et des objets - vases et figurines - en céramique et en terre émaillée. Au milieu, vases en pierres dures, trouvés dans des tombes prédynastiques et thinites. Les quatre vitrines d'angle renferment respectivement des ivoires, des verres, des pierres dures et des terres émaillées. Dans les vitrines plates des fenêtres, ***oushabtis*** en albâtre ou en terre émaillée (on appelle ***oushabtis - ou répondants -*** des figurines que l'on déposait en très grand nombre dans la tombe, et qui étaient censées effectuer, à la place du mort, différents travaux agricoles dans les Champs-Elysées égyptiens).

Cinquième Salle ou Salle des Colonnes. — 2e Salle du Mobilier funéraire. — Cette Salle est particulièrement évocatrice de la vie journalière des anciens Egyptiens, car on y a réuni des spécimens des différents objets, réels ou votifs, recueillis dans les tombes avec le mort, objets qui étaient destinés à donner à celui-ci l'illusion qu'il continuait à mener son existence terrestre. On remarquera surtout, outre les objets de matériel de scribe (vitrine IX) et les objets préhistoriques (grande palette thinite en schiste, et couteau en silex, à manche d'ivoire, d'époque prédynastique), la série des ***cuillers à fard*** (vitrine VIII) et celle des armes et instruments de musique (vitrines X à XII). Un magnifique groupe représentant le ***roi Toutankhamon protégé par le dieu Amon*** [12] (XVIIIe dynastie) et un Horus hiérocéphale en bronze faisant le geste de la libation (époque saïte), occupent les deux extrémités de la salle. Au centre, vitrine d'albâtres; dans les vitrines isolées, une harpe trigone, d'époque saïte, et une chaise thébaine à dossier, dont les pieds sont faits de jambes de lion.

Charles BOREUX,
Conservateur des Antiquités Egyptiennes.

10. — *Le roi Aménophis IV.*

LES GRANDES DIVISIONS DE L'HISTOIRE DE L'EGYPTE

Période Thinite	Ier et IIe dynasties (3200 à 2980 avant J.-C.)	
Ancien Empire — Epoque memphite	IIIe-VIe dynasties (2980 à 2475 avant J.-C.)	IIIe dyn. 2980-2900 IVe — 2900-2750 Ve — 2750-2625 VIe — 2625-2475
Ier période intermédiaire	VIIe-Xe dynasties (2475 à 2160 avant J.-C.).	
Moyen Empire — Ier époque thébaine et IIe période intermédiaire (époque des Hyksos).	XIe-XVIIe dynasties (2160 à 1580 avant J.-C.).	XIe — 2160-2000 XIIe — 2000-1788
Nouvel Empire — IIe époque thébaine	XVIIIe-XXe dynasties (1580 à 1090 avant J.-C.).	XVIIIe — 1580-1350 XIXe — 1350-1205 XXe — 1205-1090
Epoque tanite	XXIe dynastie (1090 à 945 avant J.-C.).	
Epoques bubastite, tanite, saïte et éthiopienne.	XXIIe-XXVe dynasties (945 à 663 avant J.-C.).	
Epoque saïto-persane	XXVIe-XXXe dynasties (663 à 332 avant J.-C.).	
Epoque grecque	Alexandre et les Ptolémées (332 à 30 avant J.-C.).	
Epoque romaine	Empereurs romains (30 av. J.-C. à 495 ap. J.-C.)	

12. — *Amon et Toutankhamon.*

Photos : Arch. Photogr. d'Art et d'Histoire - Paris

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LANGUE DE BOEUF VALENCIENNES	5.75	JAMBON DE STRASBOURG POMMES A L'HUILE	6.00
LEGUMES: POMMES NOUVELLES AU BEURRE	3.00	LAITUES BRAISEES AU PARMESAN	3.50
GIROLLES SAUTEES BORDELAISE	5.75	CAROTTES NOUVELLES AU BEURRE	3.75
HARICOTS VERTS FRAIS MAITRE D'HOTEL	4.00	EPINARDS AUX CROUTONS	3.75
FONDS D'ARTICHAUT AU GRATIN	4.50	ASPERGES NOUVELLES SCE HOLLANDAISE	5.75

SALADES: Cresson 2.50 Laitue 3.50 SALADE RENE spécialité 4.00 Romaine 3.50
Panaché oeuf dur 4.00

FROMAGES: Munster 3.00 Coeur à la crème 2.75 Reblochon 3.00 Crème fraiche 3.00 Gruyère 3.00
Fontainebleau 3.50 Camembert 3.00 Chèvre 3.50 Fontainebleau chocolat 3.75

ENTREMETS: ABRICOTS CUSY (spécialité) 3.75 COUPE HENRIETTE 3.75 PARFAIT CAFE 3.75
CERISES NOUVELLES 4.00 TARTE AMANDES ET FRAISES 3.75 REINES CLAUDES MARASQUIN 3.75
Banane 2.50 Gelée de coings 2.75 KOUGELHOPFF AU RHUM 2.00 Orange 3.00 NANCEEN PRALINE 2.25
COMPOTE DE POMMES 2.75 COMPOTE DE QUETSCHES 2.75 FRAISES AU SUCRE 4.00 CONFITURE FRAISES 2.75
TARTE AMANDES CERISES BANANES PANACHEE 3.75 CONFITURE ALSACIENNE AUX MYRTILLES 2.75
TARTE ALSACIENNE AUX FRUITS 3.00 FRAISES CREME 5.75 BARQUETTE DE FRAISES DES BOIS 1.75

GLACES: VANILLE 3.75 PANACHEE 3.75 FRAISE 3.75 CURACAO 3.75 PISTACHE 3.75

SAMEDI 14 MAI 1938

VOIR AU DOS LA CARTE DES VINS

LE SERVICE EST COMPRIS DANS LES PRIX DES VINS ET DES LIQUEURS

Vous pouvez emporter et déguster chez vous toutes les spécialités de "l'Alsacienne"

LA CAVE DE L'ALSACIENNE

		LE 1/2	LE 1/4
BIÈRE HATT de KRONENBOURG	Blonde.	2.~~50~~	2.00
	Brune	2.~~50~~	2.00
CIDRE de la VALLÉE d'AUGE	la bouteille	5. »	

VINS EN PICHET

	LE PICHET	LE 1/2	LE 1/4
Vin d'Alsace	~~6.00~~	5.~~50~~	3. »
Clairet de Lorraine	7.50	5.50	3. »

	LE PICHET	LE PETIT PICHET
~~Beaujolais~~	8. »	4. »
Beaujolais Tête de Cuvée (Juliénas)	9. »	4.50
Riesling (Recommandé)	9.75	4.75

VINS D'ALSACE

	LA BOUTEILLE	LE 1/2
Sylvaner de Barr	9.50	5. »
Riesling de Ribeauvillé	15. »	7.50
Traminer de Bergheim	15. »	7.50
Gewurztraminer Kaeferkopf	16. »	
Muscat d'Ammerswihr	15. »	8. »

GRANDS VINS D'ALSACE

Riquewihr (Clos du Moulin Dopff)	22. »	11.50
— Riesling L. I. 1934	26. »	13.50
— Traminer Réserve 1934	28. »	14. »
Ribeauvillé Pinot rouge 1932	26. »	14. »
— Clos Saint-Hune 1935	24. »	13. »
— Traminer (Réserve) 1934	26. »	13.50
Hunawihr Riesling (Réserve) 1928	28. »	14.50
Bergheim Kanzlerberg Riesling	20. »	11. »
— — Riesling (Réserve) 1934	25. »	13.50
— — Gewurz Traminer 1933	22. »	12. »
— — Gentil 1934	23. »	12.50
— — Traminer (Gr. Rés.) 1934	26. »	13.50
Tokay d'Alsace	25. »	13. »
Muscat de Bergheim 1934	25. »	13. »
Mittelbergheim Zotzenberg 1935 (Recommandé)	22. »	
— Brandluft 1934	26. »	

VINS DE LORRAINE ET DE MOSELLE

Vin Gris de Lorraine « Fleur de Lorraine »	14. »	
Clairet Nature « Perle de Scy »	14. »	
Vin de Moselle supérieur (Auxerrois)	17. »	
Sparking Riesling brut (Recommandé)	28. »	
Moselle Vermeil Mousseux pétillant	18. »	10. »

BOURGOGNE BLANC

Chavignol	12. »	
Macon blanc 1934	11. »	6.50
Grand Chablis 1934 (Recommandé)	14. »	7.50
Pouilly Fuissé 1933	14. »	7.50
Meursault 1928	25. »	10.50
Chablis Moutonne 1934	25. »	
Clos de la Pucelle 1929	22. »	12. »

BORDEAUX BLANCS

Bordeaux supérieur	8.50	4.50
Graves 1922 (Recommandé)	12. »	7. »
Sauternes 1919	16. »	9. »
Loupiac	16. »	
Barsac	19. »	10.50
Château Ricaud Haut Loupiac 1924	19. »	
Château Armajan des Ormes	19. »	10.50
Château Monteil Haut Sauternes 1923	25. »	
Château-Lamothe (Haut-Sauternes 1921)	25. »	

VINS DU RHONE

Châteauneuf-du-Pape 1933 (Vin bien à point)	16.50	9. »
Hermitage 1929 (Remarquable)	26. »	13.50
Côte Rôtie 1926	26. »	13.50
Châteauneuf-du-Pape. Clos des Papes 1929	22. »	12. »

VINS DU JURA

Arbois 1933	11. »	6. »
Arbois rosé 1929	15. »	
Vin de Garde (Vin Jaune) 1934	22. »	12. »
Arbois 1929	24. »	13. »
Château-Châlon 1921	50. »	

Porto d'origine très Vieux	la coupe	4.50
Porto blanc	—	3.50
Vin nature originaire de la Champagne	la bouteille	14. »
Pouilly fumé 1935	—	12. »
Chavigno 1935	—	12. »

VINS EN CARAFE

	LA CARAFE	LE 1/2	LE 1/4
Bourgogne Rouge Gamay	6.25	4.25	2.50
Anjou	7.25	5.25	2.75
Rosé de Saumur	7.~~50~~	5.~~50~~	3.00

VINS D'ANJOU ET DE VOUVRAY

Anjou (Côteau du Layon)	12. »	6.50
Rablay	12. »	6.50
Brézé de Saumur	13. »	7. »
Côteau de Saint-Lambert (moelleux)	18. »	
Quart de Chaume (Belle Rive)	23. »	
Vouvray (Le Haut-Lieu)	22. »	12. »
Vouvray mousseux coupe Royale	18. »	

BOURGOGNE ROUGE

Mâcon 1933	10. »	5.50
Chenas 1934	11. »	
Fleurie 1933	13. »	7. »
Moulin à Vent 1934 (Vin bien à point)	14. »	7.50
Mercurey 1929	18. »	9.50
Beaune 1934	18. »	9.50
Gevrey-Chambertin 1933	20. »	11. »
Chambolles Musigny 1933	19. »	10. »
Pommard Grands epenots 1934	22. »	12. »
Beaune Marconnets 1929	24. »	13. »
Chambertin 1933	30. »	16. »
Chambolles Bonnes Mares 1929 (Grand Vin)	35. »	
Corton 1926 ; Musigny 1929	40. »	
Chambertin 1929 (Grand Vin)	40. »	21. »

BORDEAUX ROUGE

Bordeaux supérieur	8.50	4.75
Médoc 1933 (Cussac)	10. »	5.50
~~Saint-Emilion 1929 Château Hermitage~~	13. »	7. »
Pontet Canet 1920	16. »	[illegible]
Haut-Médoc 1928	[illegible] »	7.50
Château Pomys Saint-Estèphe	20. »	
Château La Tour Marbuzet	16. »	
Château St-Emilion 1er crû 1924	22. »	10. »
— Lynch Bages 1928	28. »	
— Château Carbonnieux		15. »

MOUSSEUX ET CHAMPAGNES

Vin nature originaire de la Champagne délimitée	14. »	
Vin nature originaire des « Vertus »	16. »	
Rosé de Champagne œil de Perdrix	19. »	11. »
Geismann 1929 sec	26. »	
Abel Lepître Ludes	28. »	
Heidsieck à Reims, sec ou 1/2 sec	32. »	18. »
Mercier étoile d'or sec	26. »	13. »
Montebello cordon noir	34. »	18. »
Delbeck (Carte Verte) sec	32. »	
Piper Heidsieck demi-sec	42. »	24. »
— sec ou brut	45. »	25. »
Vve Devaux Brut	38. »	

EAUX MINÉRALES

	LA BOUTEILLE	LE 1/2	LE 1/4
Vittel, Vichy Célestins, Perrier, Carola, Evian, Vals, Soulzmatt (service compris)	4.75	3.25	2.50
Badoit	3.75	3. »	2. »

EAUX-DE-VIE D'ALSACE ET DE LORRAINE

	LE VERRE	LE V. DÉGUS
Mirabelle, Kirsch, Quetsch, Prunelle	4. »	6. »
Framboise, Myrtilles, Sureau	5. »	7.50
Fraises des Bois, Rosée d'Alsace, Gouttes d'or d'Alsace, Bénédictine, Cherry Rocher, Cointreau, Grand Marnier	5. »	7. »

Belle collection de Liqueurs Alsaciennes.

Demander la carte spéciale de ces alcools remarquables.

LE CAFÉ DE LA MAISON EST TRÈS SOIGNÉ

Nous livrons nos Vins dans tout Paris — (Demandez le tarif spécial pour la Vente en Ville)

CONTENANCE DES RÉCIPIENTS { CARAFES ENVIRON 75 - 50 - 25 C[illegible] / PICHETS — 75 - 70 - 50 - 34 - 22 C[illegible]

BOUTEILLES { BOURGOGNE 75 - 35 C[illegible] / BORDEAUX 70 - 34 C[illegible] / ALSACE 70 - 33 C[illegible]

IMP. A. CHERVET, 65, BOUL. DE STRASBOURG, PARIS

Paris to Avignon

As we left Paris the farming became gradually poorer, partly due to poorer soils, except in the alluvial valleys, and, near Avignon, to the lower summer rainfall. Most of the farmers live in villages.

Figure 26. View several miles from Lyon, France

Figure 27. View in Lyon, France

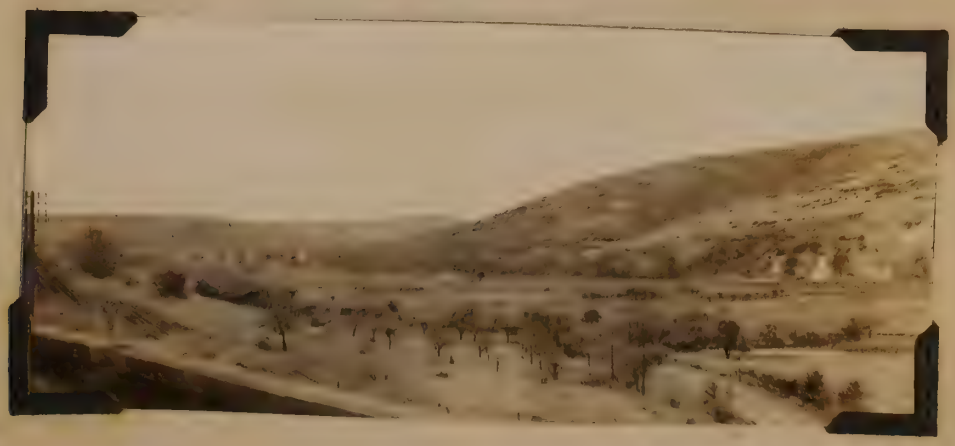
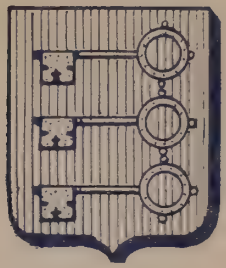


Figure 28. View in Dijon, France

Avignon Cité des Papes



Deux Hôtels

DOMINION

GRILLON

L'HOTEL CRILLON

Le « **Crillon** » est situé au centre de la vieille cité des Papes.

Toutes ses chambres, pourvues du dernier confort sont avec cabinet de toilette, w.-c. particuliers, ou salle de bain.

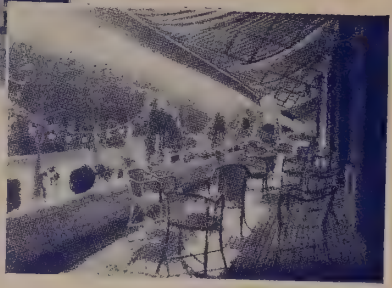
Son restaurant est renommé pour sa fine cuisine et ses grands crûs de vins régionaux.

De plus, un garage avec mécanicien, est à la disposition des clients de l'hôtel.

Tous les services du « Crillon » sont fournis à ses clients à des prix modérés.

DOMINION-HOTEL

Le grand salon de l'Hôtel, meublé en style ancien.



La terrasse et le restaurant en plein air.

Toutes les chambres avec antichambre,
Salle de bains ou cabinet de toilette complet,
w. c.
Téléphone

Bar américain

2 Tennis

Garage chauffé pour 80 voitures, avec mécanicien,
Ouvert jour et nuit.

Le restaurant principal (spécialités régimales)

Palais des Papes

Le « **Dominion** » est avec ses 100 chambres toutes des plus confortables, le plus grand et le plus raffiné des hôtels de la région.

Construit en 1925 il a tout de suite conquis les nombreux touristes par son ambiance provençale et son luxe de bon aloi.

Situé dans un quartier aristocratique des plus tranquilles il est cependant à quelques minutes du centre de la ville et à 200 mètres de la gare.

Son restaurant est des plus réputés et chacun se plaît à dîner sur sa terrasse fleurie et à y goûter le charme des soirées provençales.

Façade principale du Palais

HISTORIQUE

La ville d'Avignon fut bâtie autour du rocher des Doms, forte position au-dessus du Rhône, utilisée par les Ligures et les Gaulois. Ce fut tout d'abord une agglomération principale de la nation des Volques, puis une ville d'une certaine importance pendant l'époque romaine.

Avignon forma, aux XIIe et XIIIe siècles, une République qui tint en échec les comtes de Toulouse et de Provence, et même les rois de France ; Louis VIII l'assiégea en 1126.

HISTORY

The City of Avignon was built around the Doms rock, a strong position above the Rhone used by the Ligures and the Gauls. It was, at first, one of the principal agglomerations of the nation of the Volques, then a town of a certain importance during the Romain period.

In the 12th. and 13th. centuries Avignon formed a Republic, which held the Counts of Toulouse and Provence, and even the Kings of France, in check ; Louis VIII besieged it in 1226.

Place du Palais

Le XIVe siècle ouvrit à la ville une ère de gloire ; les papes chassés d'Italie s'y réfugièrent.

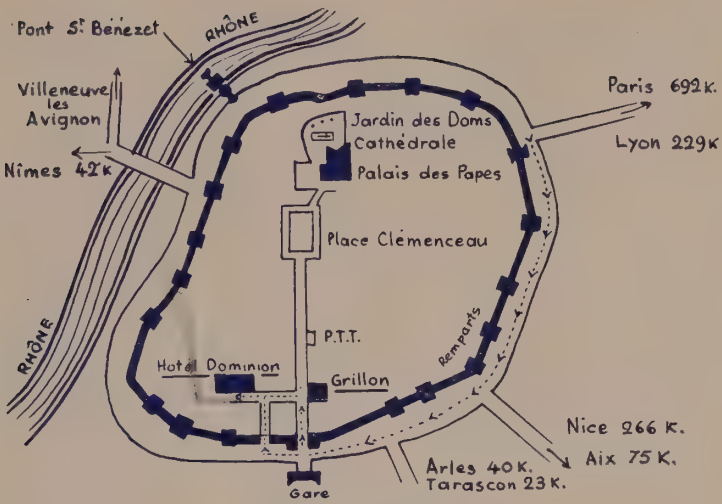
Malgré le séjour des légats et des vice-légats qui l'administrèrent du XVe siècle à 1790, la ville vit s'affaiblir au XVIe siècle le grand mouvement créé par les papes, elle ne recouvra sa prospérité qu'au XVIIIe siècle par l'épanouissement de son industrie.

Avignon fut réunie à la France par décret du 14 septembre 1791. Elle connut alors les horreurs d'une révolution sanglante (mas-

Which the 14th. century, a period of glory commenced for the City ; the Popes, driven out of Italy, took refuge there.

In spite of the residence of the legates and vice-legates who administered it from the 15th. century until 1790, in the 16th. century the City saw the weakening of the great movement created by the Popes, and it did not recover its prosperity until the 18th. century, by the rise of its industry.

Avignon was reunited to France by a decree of Sep-



EXCURSIONS

Renseignements et tarifs au bureau de l'hôtel.

Guides parlant anglais, allemand, italien pour la visite privée du Palais et les excursions.

For all informations and tariff, apply to the office. English speaking guides.

Palais des Papes

Visites à 9 h., 10 h. et 11 h. 14 h., 15 h. et 16 h.

Palais des Papes. Tour de ville (remparts).

Villeneuve-les-Avignon, (chartreuse, église, Fort St-André, Tour Philippe-le-Bel. 2 à 3 heures.

St-Rémy, les Baux, Fontvieille, Abbaye-de-Montmajour, Arles. Demi-journée.

Pont du Gard, Nîmes (maison carrée, arènes). Uzès. Demi-journée.

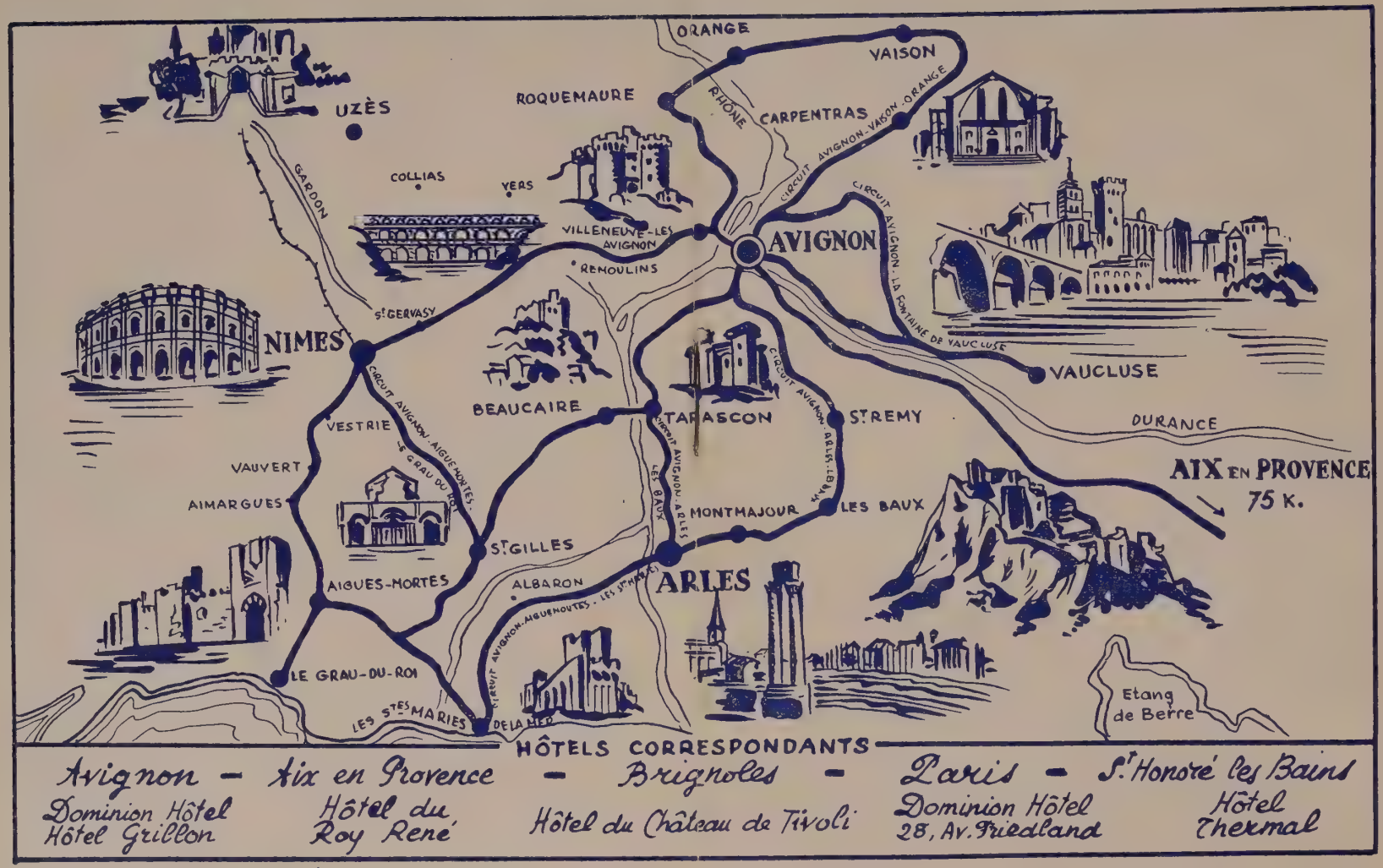
Orange (Théâtre antique, arc de triomphe). Demi-journée.

Fontaine de Vaucluse. Pernes les Fontaines. Demi-journée.

Château de Lourmarin. Demi-journée.

Orange, Nyons, Grignan (château de Mme de Sévigné), Vaison-la-Romaine. Demi-journée.

Saintes-Maries de la Mer (pèlerinages des Bohémiens en mai). Aigues-Mortes (remparts). La Camargue, Arles.


ORANGE
VAISON
ROQUEMAURE
RHÔNE
CARPENTRAS
CIRCUIT AVIGNON-VAISON-ORANGE
UZÈS
GARDON
COLLIAS
VERS
VILLENEUVE-LES AVIGNON
AVIGNON
REMOULINS
CIRCUIT AVIGNON-LA FONTAINE DE VAUCLUSE
VAUCLUSE
St GERVASY
NIMES
BEAUCAIRE
TARASCON
CIRCUIT AVIGNON-ARLES-LES BAUX
St REMY
DURANCE
VESTRIE
CIRCUIT AVIGNON-AIGUES-MORTES-LE GRAU DU ROI
VAUVERT
AIMARGUES
CIRCUIT AVIGNON-ARLES-LES BAUX
MONTMAJOUR
LES BAUX
AIX EN PROVENCE
75 K.
St GILLES
AIGUES-MORTES
ALBARON
ARLES
CIRCUIT AVIGNON-AIGUES-MORTES-LES STES MARIES
LE GRAU-DU-ROI
LES STES MARIES DE LA MER
Etang de Berre
HÔTELS CORRESPONDANTS
Avignon — Aix en Provence — Brignoles — Paris — St Honoré les Bains
Dominion Hôtel
Hôtel Grillon
Hôtel du Roy René
Hôtel du Château de Tivoli
Dominion Hôtel
28, Av. Friedland
Hôtel Thermal

Pont St-Bénazet et le Rhône

sacre de la Glacière), puis d'une contre-révolution, au cours de laquelle la population royaliste massacra le maréchal Brune.

LA VILLE

Comptant près de 50.000 habitants, chef-lieu du département de Vaucluse et siège d'un archevêché, Avignon est une des cités les plus intéressantes du midi de la France.

La ville construite sur la rive gauche du Rhône, est entièrement ceinte de remparts des XIIIe et XIVe siècles.

tember 14th 1791. It then experienced all the horrors of a bloody revolution, in the course of which the Royalist population massacred the Marshal Brune.

THE CITY

Couting nearly 50.000 inhabitants, chief town of the Department of Vaucluse, and seat of an Archbishopric, Avignon is one of the most interesting cities of the South of France.

The City, built on the left bank of the Rhone, is entirely surrounded by ramparts of the 13th. and 14th. centuries.

Distances Kilométriques d'Avignon à :

Aix-en-Provence	75	Marseille (par Aix)	104
Aix-les-Bains	295	Menton	297
Antibes	243	Montpellier	98
Arles	41	Montélimar	79
Les Baux	30	Narbonne	193
Beaulieu-sur-Mer	278	Nîmes	42
Béziers	166	Nice	266
Biarritz	639	Orange	28
Brignoles	132	Paris	692
Cannes	231	Perpignan	262
Carcassonne	250	Pont du Gard	24
Carpentras	26	St-Rémy	22
Dijon	414	St-Raphaël	200
Draguignan	182	Salon	46
Evian	409	Tarascon	24
Hyères	165	Toulon	153
Lyon	229	Toulouse	352
Lourdes	417	Uzès	30
Mâcon	289	Valence	128
		Vaucluse	30

Spécialités de la Ville. — Céramiques et faïences artistiques ; bijoux et meubles de Provence ; soie, primeurs, raisins et fruits confits ; vins des côtes du Rhône, crus renommés de Châteauneuf-du-Pape.

Specialities of the City. — Artistic pottery and faience ; Provençal jewellery and furniture ; silk ; early vegetables, grapes, and preserved fruit ; wines of the Rhone slopes, vintages of the Chateauneuf du Pape.

LES MONUMENTS

Le Palais des Papes. — Le Palais actuel occupe l'emplacement du palais épiscopal primitif. Jacques d'Euse, évêque d'Avignon, devenu pape (Jean XXII), fit agrandir et embellir son ancienne résidence.

MONUMENTS

The Palace of the Popes. —The present Palace occupies the site of the original episcopal palace. Jacques d'Euse, Bishop of Avignon, when he became Pope (John XXII), had his former residence enlarged and embellished.

Les remparts et le Rhône

Benoît XII fit édifier par Poisson et Obreri la partie septentrionale du palais actuel avec les tours des Anges, de la Glacière, Saint-Jean, de la Campane et du Trouillas ; celle-ci a actuellement 52 mètres de haut et c'est encore le plus élevé des donjons du Moyen-Age.

C'est dans la cour intérieure de ce palais qu'eurent lieu, en 1562, l'exécution de Perrinet Parpaille, et en 1791 l'odieux massacre de soixante personnes accusées de modérantisme par les républicains. Clé-

Benedict XII has the Northern part of the present Palace, with towers of the Angels, the Glacière, St. John de la Campane and the Trouillas, built for him by Poisson and Obreri ; the latter is 160 feet high, and is still the highest of the donjons of the Middle Ages. It was in the interior court of this Palace that the execution of Perrinet Parpaille took place in 1562, and in 1791 the horrible massacre of 60 persons accused by the republicains of modérantism. Clement VI had the whole

ment VI fit construire tout le corps du bâtiment que forme la façade occidentale et décorer les oratoires de la tour Saint-Jean ; Innocent VI termina la partie orientale avec la tour de Saint-Laurent ; Urbain V fit tailler dans le roc la grande tour d'honneur.

L'Eglise cathédrale de Notre-Dames-des-Doms. — Bâtie dans les premiers siècles de l'Eglise, reconstruite vers le milieu du XIIe, restaurée en 1431 ; son clocher supporte la statue de Notre-Dame-des-Doms. A l'intérieur magni-

block of buildings forming the Western front constructed and the oratories of St. John's Tower decorated. Innocent VI finished the Western part, with the Tower of St.Laurence. Urban V had the great court of honour hewed out of the solid rock.

The Cathedral Church of Our Lady of the Doms. — Built in the early centuries of the Church ; reconstructed towards the middle of the 12th. century, restored in 1431, its tower supports the statue of Our Lady of the Doms. Inside is the

Villeneuve-les-Avignon

fique tombeau de Jean XXII.

Le Pont Saint-Bénazet. — Commencé en 1177 par le pâtre Bénazet, sa construction payée avec des dons et des quêtes dura huit années ; il ne reste aujourd'hui que quatre arches (il y en avait dix-neuf), dont une surmontée par la chapelle Saint-Nicolas.

Eglise St-Pierre (XIVe-XVe siècles). — Belle façade.

Eglise Saint^{e}-^{e}Didier. — Eglise gothique.

Ancien Hôtel des Monnaies. — Aujourd'hui Conservatoire de Musique.

magnificent tomb of John XXII.

The Bridge of St-Bénazet. — Commenced in 1177 by the shepherd Bénazet, its construction, paid for by gifts and collections, lasted 8 years. To-day only four arches remain (there were 19), one of which is surmounted by the Chapel of St. Nicholas.

Church of St. Peter (14th and 15th centuries).—Fine façade.

Church of St. Didier. — Gothic church.

Ancien Mint. — Now, the Conservatoire of Music.

Éditions André BLAY, 4, place de la Porte-de-Bagnolet, Paris. Tél Roq 02 73

Avignon

In this very old walled city there is a small branch experimental Station. I drove out in the country nearby and saw many small, irrigated farms of 2 to 5 hectares where tomatoes, cabbage, peaches, cherries, grapes, etc. were grown. On the higher, dry terraces olives and grapes were grown. In the lowlands were brownish-gray, calcareous alluvial soils (Figures 31 to 36) while the terraces had Terra Rossa. On some of the uplands there appeared to be a weak development of our Non-calcic Brown soils and Reddish Brown soils, only slightly lateritic (Figure 37.). A few sheep and goats were pastured on the dry, sparsely covered hills.

-37-

Jean BORDAS

LES " TYPES " DE SOLS DES VIGNOBLES DES " COTES-DU-RHONE "

(Bulletin de l'Association Française pour l'Etude du Sol)
(Tome III, N° 4. Décembre 1937)

BEAUVAIS
IMPRIMERIE CENTRALE ADMINISTRATIVE
15, place Ernest-Gérard, 15

8353

Hommage respectueux

LES " TYPES " DE SOLS DES VIGNOBLES DES " COTES-DU-RHONE "

par Jean Bordas

Directeur de la Station de Recherches Agronomiques d'Avignon
Président de la Section Midi-Sud-Est
de l'Association Française pour l'Etude du Sol

avec la collaboration de M. Gaston Mathieu, *Chef de Travaux*

I. — Introduction

On désigne sous l'appellation « Côtes-du-Rhône » les vignobles situés sur les coteaux longeant les deux rives du fleuve entre Lyon et Avignon. Toutefois, on doit remarquer que de Lyon à Vienne, les vignes, sans être absentes, sont rares et de peu d'importance (Millery, Charly, Sainte-Foy). Leur produit va le plus souvent à la consommation familiale et l'usage de l'appellation n'a jamais été revendiqué.

D'autre part, sur cette longue étendue, il y a des zones où la culture de la vigne cesse brusquement sur la rive gauche dans le département de l'Isère et sur les deux rives (entre Valence et le Défilé de Donzère).

Les « Côtes-du-Rhône » se divisent à peu près naturellement en 3 groupes : Septentrional, Moyen et Méridional (voir carte).

L'aire de production de ces vins s'étend donc du Nord au Sud sur près de 200 kilomètres. On conçoit que la constitution géologique d'une telle région soit très variable : on y rencontre des roches éruptives, cristallo-phylliennes et sédimentaires (jusqu'aux alluvions quaternaires récentes). Mais on doit se rappeler que ce n'est pas tant la nature de la roche géologique que celle du sol issu de celle-ci qu'il importe de connaître.

La Pédologie, par ses méthodes nouvelles d'examen et certaines bases de classification, nous permet d'avoir actuellement une autre conception sur le rôle du milieu sol dans la production végétale.

L'examen morphologique sur place des sols et l'étude de leur genèse permet de rattacher les terres des vignobles

des Côtes-du-Rhône à *six « types de sols »* dont nous essayons de dégager le sens des caractéristiques essentielles au point de vue agronomique et œnologique.

Nous allons, au préalable, décrire succinctement les grandes lignes géologiques et orogéniques de cette région viticole.

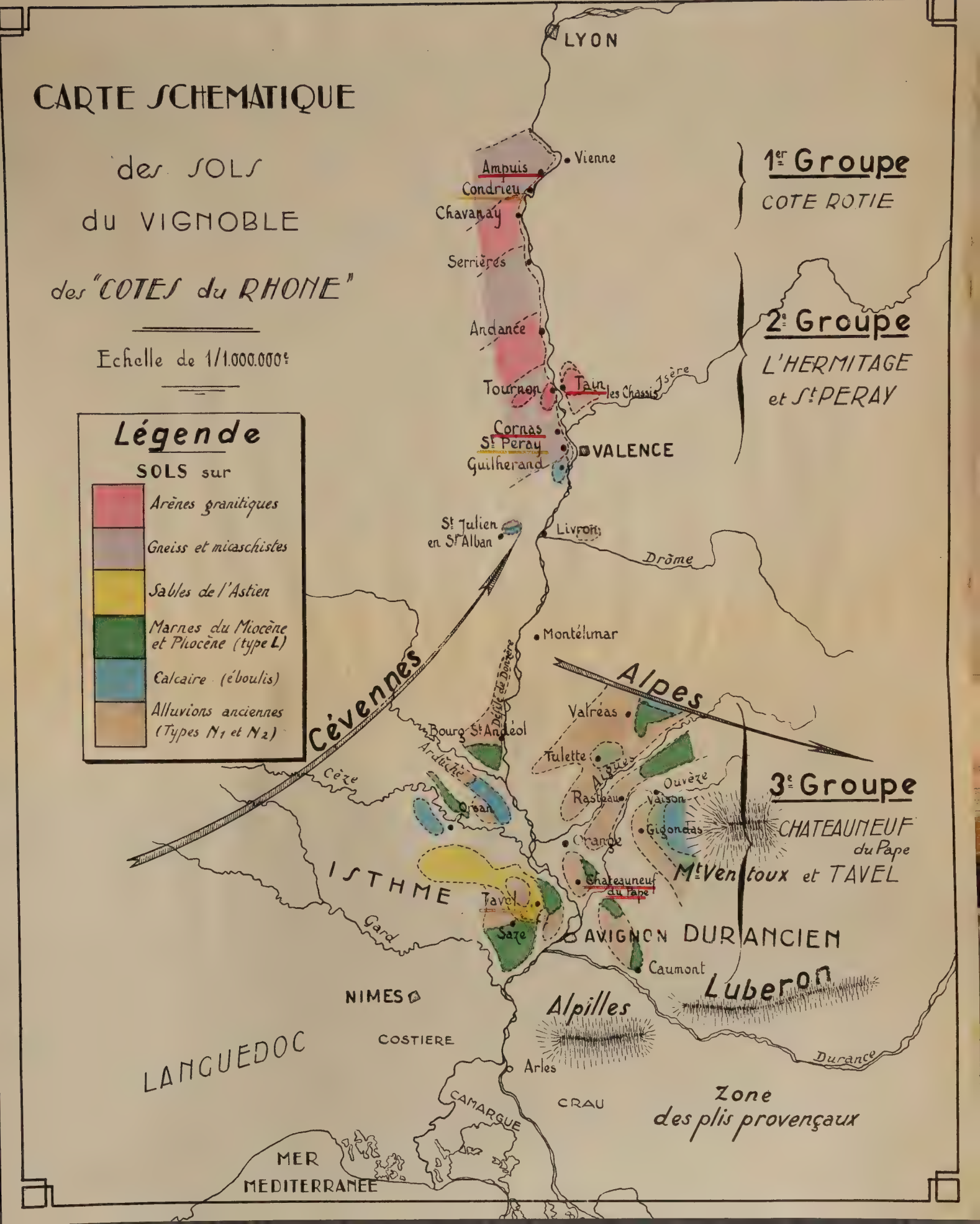
II. — Aperçu géologique et orogénique du vignoble des « Côtes-du-Rhône »

a) **Groupe septentrional** (**Côte-Rôtie-Condrieu**). — Les vignobles du groupe septentrional sont tous sur la rive droite, en bordure du Rhône et sur les pentes du massif hercynien que le fleuve a entaillé fortement de Lyon jusqu'à Valence. Les monts du Vivarais et des Cévennes sont constitués presque entièrement de roches cristallophylliennes où les schistes et le gneiss dominent ; à certains endroits apparaissent des roches éruptives (granits surtout), au sud de Condrieu sur les pentes du Mont-Pilat, à Serrières et à Tournon. Nous trouvons à mi-côte des dépôts de lœss assez importants (Saint-Pierre de Bœuf, Serrières, Saint-Désirat, Toulaud) ; d'ailleurs ces terres plus fertiles sont généralement complantées en arbres fruitiers ou en vignes de chasselas et d'hybrides.

Tous ces coteaux de roches anciennes sont très escarpés, les murs nécessaires à la retenue des terres (certains remontent à l'époque romaine) donnent à ce vignoble un aspect caractéristique et tous les travaux culturaux se font à bras, ce qui augmente considérablement le prix de revient.

b) **Groupe moyen** (**Tournon-Tain**). — Sur la rive droite les terrains décrits ci-dessus se prolongent jusqu'à Saint-Péray. A l'est de ce chef-lieu de canton, le Rhône actuel, s'éloignant un peu de la chaîne hercynienne, laisse à droite quelques alluvions anciennes de cailloux roulés (Cornas) et un îlot jurassique (Crussol). Sur les éboulis calcaires de ce massif nous trouvons les vignobles de Guilherand.

Sur la rive gauche est situé la montagne de l'Hermitage, massif granitique identique à celui de Tournon (Saint-Joseph) qui lui fait vis-à-vis. Immédiatement au Sud nous trouvons les terrasses fluvio-glaciaires de l'Isère (nappe de Romans) à son confluent avec le Rhône qui forment un vaste cône de déjection de cailloutis surmontés d'une faible couche de terre rouge légèrement décalcifiée (région des Chassis).


CARTE SCHEMATIQUE
des SOLS
du VIGNOBLE
des "COTES du RHONE"
Echelle de 1/1.000.000e
Légende
SOLS sur
Arènes granitiques
Gneiss et micaschistes
Sables de l'Astien
Marnes du Miocène et Pliocène (type L)
Calcaire (éboulis)
Alluvions anciennes (Types N1 et N2)
LYON
Vienne
Ampuis
Condrieu
Chavanay
Serrières
Andancé
Tournon
Tain
les Chassis
Isère
Cornas
St Peray
VALENCE
Guilherand
St Julien en St Alban
Livron
Drôme
Montélimar
Cévennes
Alpes
Valréas
Bourg St Andéol
Ardèche
Cèze
Tulette
Aygues
Ouvèze
Rasteau
Vaison
Gigondas
Orange
Chateauneuf du Pape
Tavel
Saze
ISTHME
Gard
AVIGNON
DUR ANCIEN
Caumont
Luberon
Alpilles
NIMES
COSTIERE
LANGUEDOC
Arles
CRAU
CAMARGUE
Durance
Zone des plis provençaux
MER MEDITERRANEE
1er Groupe
COTE ROTIE
2e Groupe
L'HERMITAGE et St PERAY
3e Groupe
CHATEAUNEUF du Pape
Mt Ventoux et TAVEL

c) **Groupe méridional (Tavel-Châteauneuf).** — Si l'on excepte le petit coteau de Brezem et du Château de la Rollière à Livron (alluvions anciennes à cailloux roulés), ainsi que quelques vignobles à Saint-Julien et Saint-Alban, la région n'est plus viticole de Valence à Pierrelatte (rive gauche) et de Saint-Péray à Bourg-Saint-Andéol (rive droite).

Au Défilé de Donzère nous entrons dans la basse vallée du Rhône tout à fait différente au point de vue climat (climat méditerranéen) et au point de vue géologique et orogénique.

Le sillon rhodanien s'élargit brusquement au sud de Montélimar ; à l'est la montagne alpine s'éloigne (Le Ventoux et le Luberon sont des chaînes pyrénéennes comme tous les Monts de Provence), à l'ouest les Cévennes, sur la rive droite, quittent le Rhône à La Voulte et obliquent vers le Sud-Ouest en direction d'Alès.

Une longue succession de plateaux calcaires (garrigue nîmoise — plateaux ardéchois — Hauts-Plateaux Vauclusiens, plateaux de Valensole, Plans de Provence) forment ce qu'on appelle « l'Isthme Durancien » encastré entre les deux Massifs Hercyniens des Cévennes au N.-O. et des Maures au S.-E.

Cette bande de terre émergée pendant des temps considérables a reçu le choc des plissements pyrénéo-provençaux et des mouvements alpins. C'est ainsi que se sont formés : la gouttière tectonique du Rhône avec le champ de faille d'Avignon, les bassins d'ennoyage du Tricastin, du Nyonsais et la dépression de Pujaut-Nîmes (remblaiement miocène et pliocène). La fin du pliocène et le quaternaire constituent des époques d'aplanissement cyclique dont l'œuvre est assez complexe : érosion alternant avec des phases de remblaiement dues aux affluents du Rhône et variation du niveau de base de l'époque glaciaire.

Nous trouvons les vignobles des Côtes-du-Rhône Sud sur la rive droite (Basses-Ardèche et Gard) en bordure du Rhône, le long de la cassure de l'Isthme Durancien.

Sur la rive gauche, dans la basse Drôme les vignobles apparaissent sur les anticlynaux du Tricastin et du Nyonsais.

Dans le Vaucluse ils se trouvent dans la partie orientale de la gouttière tectonique du Rhône (ennoyage miocène) et sur les terrasses anciennes bordant le Rhône, ainsi que

sur les cônes de déjection parfois très vastes de ses affluents (Aigues et Ouvèze notamment).

III. — Les six « types » de sols du vignoble

L'examen sur place des vignobles que l'un de nous a pu faire au cours de la délimitation des « Côtes-du-Rhône » des groupes septentrional et moyen et, d'autre part, nos travaux de recherches en cours (1) sur les sols de la basse vallée du Rhône nous permettent, dès maintenant, de pouvoir répartir les vignobles des Côtes-du-Rhône de la façon suivante, en ce qui concerne les types de sols :

1° **Sols d'érosion d'arènes gneissique et mica-schisteuse.** — Que nous trouvons dans le département du Rhône à Ampuis, Tupin, Condrieu, dans le département de l'Ardèche dans le canton de Serrières (Limony, Charnas, Félines, Saint-Désirat) puis plus au sud, au nord de Tournon dans la région de Sarras à Arras, Sècheras, Vion, Lemps Saint-Jean-de-Muzols, et enfin à Saint-Péray, Toulaud Châteaubourg et Glun.

2° **Sols d'érosion d'arène granitique.** — Situés sur la rive droite du Rhône, au Sud de Condrieu, dans le département de la Loire à Vérin, Saint-Michel, Chavanay, Malleval, Saint-Pierre-de-Bœuf ; puis dans l'Ardèche à Andance, Saint-Etienne, Saint-Désirat, Mauves, Tournon et vis-à-vis sur l'autre rive à Tain-L'Hermitage, Croze, Larnage, Erôme, Serves et Saint-Uze (Drôme).

3° **Sols squelettiques sur éboulis calcaires.** — Qui sont plus rares mais très nettement représentés à Guilherand (Ardèche) sur les pentes du rocher de Crussol et à Vacqueyras, Gigondas, Sablet et Séguret (Vaucluse) sur le revers occidental des dentelles de Montmirail et enfin à Bagnols et Saint-Etienne-des-Sorts (Gard) en bordure des grands plateaux calcaires ardéchois.

4° **Sols d'érosion sur marnes miocènes et pliocènes.** — Nous les trouvons sur mollasse du vindobonien en Vaucluse à Cairanne, Rasteau, Vaison, Sablet, Séguret, Roaix,

(1) Au cours des mémoires insérés dans les Annales Agronomiques, nous donnons plus de détails sur chacun de ces types de sols. Nous nous contenterons ici de présenter les principaux caractères morphologiques et analytiques.

Buisson, Saint-Roman, Gigondas, Vacqueyras, Caumont. Sur plaisancien dans le Gard à Pujaut, Domazan, Montfrin, dans le Vaucluse à Cairanne et Visan, dans la Drôme à Tulette.

5° **Sols squelettiques sur sables de l'Astien.** — Ils sont très développés dans le Gard où nous les trouvons à Orsan, Chusclan, Saint-Victor-Lacoste, Saint-Geniès-de-Comolas, Saint-Laurent-des-Arbres, Lirac, Tavel, Roquemaure, Pujaut, Rochefort, Saze, Estézargues, Domazan. Dans le Vaucluse, ils existent un peu à Châteauneuf-du-Pape, Sorgues et Visan. Nous trouvons encore des petits îlots à Bollène et Villedieu.

6° **Sols bruns rougeâtres sur alluvions fluviatiles du Rhône et de ses affluents.** — Qui représentent un des types de sols les plus caractéristiques de la moyenne et basse vallée du Rhône et sur lequel nous trouvons de très nombreux vignobles :

Ardèche : à Cornas, La Voulte, Bourg-Saint-Andéol, Saint-Marcel-d'Ardèche, Saint-Just et Saint-Martin-d'Ardèche.

Gard : à Pont-Saint-Esprit, Saint-Alexandre, Saint-Michel-d'Euzet, Saint-Gervais, Saint-Nazaire, Venejean, Laudun, Tresques, Codolet, Gaujac, Chusclan, Roquemaure, Tavel, Pujaut, Lirac, Sauveterre, Rochefort, Domazan, Saze, Villeneuve-lès-Avignon.

Drôme : à Serves, Mercurol, Erôme, Larnage, Chanos-Curson, Beaumont, Pont-de-l'Isère, La Roche-de-Glun (ces 4 communes constituant la région dite des Chassis), Loriol (Brezem), Bouchet, Taulignan, Suze-la-Rousse, Tulette, Rochegude et Vinsobre.

Vaucluse : à Valréas, Sainte-Cécile, Cairanne, Rasteau, La Garde, Paréol, Piolenc, Uchaud, Camaret et Travaillan (Plan de Dieu), Sérignan, Séguret, Sablet, Gigondas, Vacqueyras, Joncquières, Violès, Sarrians, Châteauneuf-du-Pape, Orange, Courthézon, Bédarrides, Sorgues, Morières, Gadagne, Saint-Saturnin, Jonquerette, Caumont.

On ne trouvera pas des vignes ayant droit à l'appellation d'origine sur les deux types de sols suivants : *sols pâles, sur lœss, et sols gris sur alluvions fluviatiles récentes* (*présols*), qui sont assez répandus dans la vallée du Rhône. Ce sont

des sols peu différenciés de leur roche-mère sous-jacente, cette dernière étant *meuble* et *profonde*. Par leur constitution physique ou par leur situation dans les parties basses, ces sols ne sont pas qualifiés pour porter des vignobles de qualité (vignes à grands rendements de la Camargue et du Languedoc).

Enfin, nous devons signaler que l'on rencontre quelques vignes (elles sont très rares) *sur terra rossa remaniée*.

On trouve, en effet, en certains endroits des vastes plateaux calcaires formant l'Isthme Durancien, quelques petites cuvettes où s'est rassemblé une argile rouge de décalcification d'origine karstique. Si nous en parlons c'est pour faire remarquer que ce qui est une très rare exception pour les « Côtes-du-Rhône » devient un cas presque général pour les vignobles du Var et des Bouches-du-Rhône situés dans la zone des Plis Provençaux où ces bassins fermés abondent (Aix, Saint-Maximin, Cuges, La Roquebrussane, etc...).

Ainsi donc les vignobles des Côtes-du-Rhône, dont certains types de sols ont bien un caractère rhodanien, se différencient nettement, quant au sol, des groupes des autres vignobles provençaux et languedociens.

IV. — Quelques caractères pédologiques de ces types de sols

Pour les cinq premiers types de sols précédemment cités, l'étude pédologique, *in situ*, sera réduite à sa plus simple expression. Le sol formé aux dépens de ces différents dépôts est pour ainsi dire inexistant. Presque partout, en effet, la roche-mère ne se prête qu'à la constitution d'un sol squelettique. D'autre part, conséquence des phénomènes géologiques et orogéniques de la région (1), le ruissellement, l'érosion, les apports eoliens, sont venus contrarier la genèse de ces sols. Le sixième type de sol — sol brun rougeâtre, sur alluvions fluviatiles (qui fera l'objet plus tard d'une étude plus détaillée) — nettement différencié de la roche-mère — présente certains caractères des sols climatiques.

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(1) *Jean Bordas*. — Contribution à l'Etude des Sols de la Basse Vallée du Rhône. Ann. Agron. 1937, n° 1.

— Sols d'érosion d'arènes granitique, gneissique et micaschisteuse :

Le granite est à grains fins et à tendance microgranitique. Il présente un faciès de bordure.

Le granite gneissique à cordierite est le granite fondamental de la région ; il est très souvent gneissique et presque toujours micacé.

Le gneiss est stratiforme ; il est à feldspaths alcalins oligoclases, à mica noir et quartz plus rarement à cordierite. Il a une composition chimique moyenne sensiblement la même que le granite fondamental de la région.

Le gneiss granulitique que l'on rencontre également diffère des précédents par une couleur plus claire, une acidité plus grande et une teneur plus élevée en alcalis ; il est moins riche en Chaux, Magnésie et Fer.

Les Schistes métamorphiques sont d'âge inconnu, peut-être du Précambrien. Ce sont des schistes quartzo-siriciteux, des chloro-schistes, des schistes à grenat, des tourmalines et biotites, des schistes serpentineux noirâtres avec de rares niveaux amphiboliques. Au voisinage du granite ils subissent une modification plus ou moins profonde, surtout par durcissement (formation de « Hornfels » à mica noir) tantôt par feldspathisation, ce dernier cas est le plus fréquent ; la zone feldspathisée est d'ailleurs percée de nombreux filons d'aplite (1).

Les arènes granitiques et gneissiques dont la formation classique est bien connue forment un sol à éléments grossiers ou le quartz reste intact. Les parties argileuses provenant des feldspaths sont entraînées par ruissellement et s'écoulent dans les ravins à travers les murs de soutien en pierres sèches. Parfois l'oxyde de fer hydraté colore les arènes en jaune ou brun. La teneur en SiO^2 du granit décomposé est donc peu modifiée tandis que la teneur en CaO l'est beaucoup. Tous ces sols ont une réaction acide très nette. Le pH est parfois inférieur à 5.

— Les sols d'érosion sur éboulis calcaires se trouvent sur les versants des massifs jurassiques et crétacés de Crussol (Ardèche), de la Lance (Drôme) et des dentelles de Montmirail (Vaucluse).

(1) D'après les notices des cartes géologiques (feuilles de Valence et Saint-Etienne).

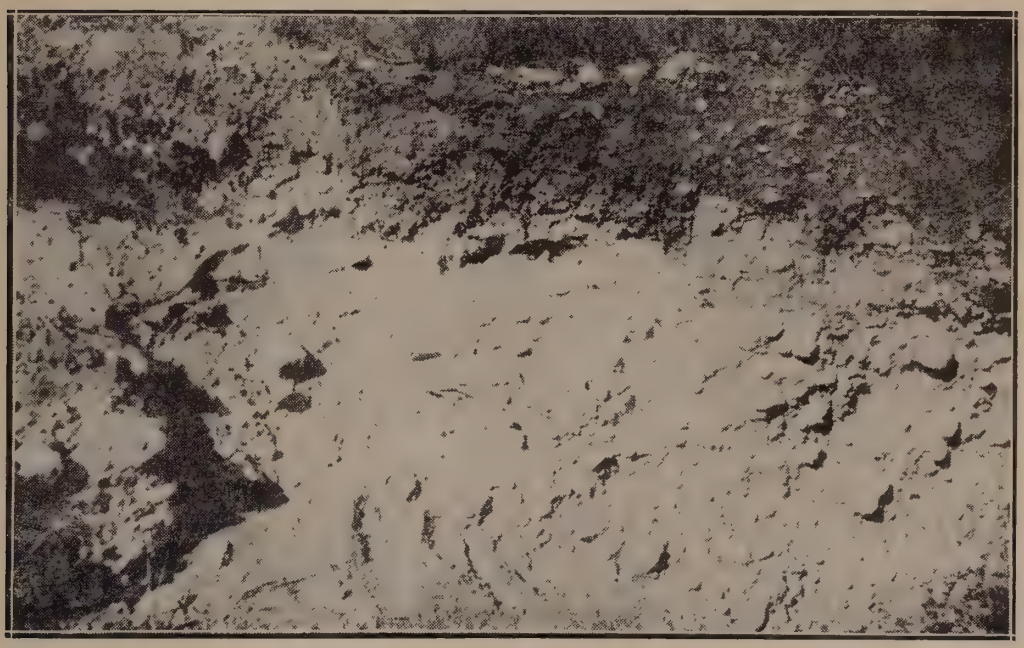
Ampuis (Rhône). — Le vignoble de la Côte Rôtie.
A droite, la plaine du Rhône.

Tain (Drôme).
Au premier plan : le Rhône ; au deuxième : la plaine alluvionnaire ;
au troisième : le côteau de l'Hermitage et son vignoble.

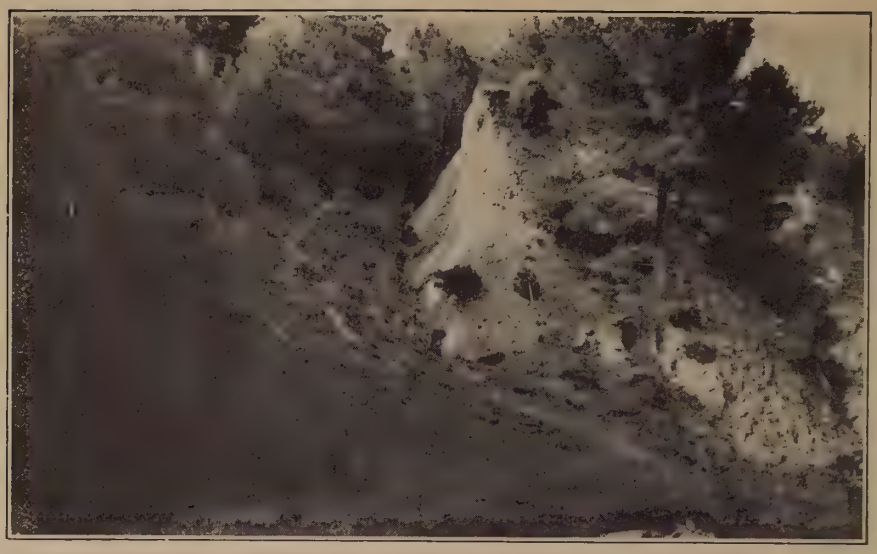
Guilherand (Ardèche). — Vignes sur les éboulis calcaires de Crussol.

Crozes-Hermitage (Drôme). — A gauche, vignes sur arène granitique, à droite, dépôt de lœss.

Roquemaure (Gard). — Vignes sur sables de l'Astien.
Au premier plan, placé debout, un banc de grès.



Morières (Vaucluse). — Profil d'un sol brun (N_1) sur alluvions fluviatiles anciennes à cailloux roulés (conglomerat).



Caumont (Vaucluse). — Type de Mollasse du Miocène.

Châteauneuf-du-Pape (Vaucluse). — Vue prise du vignoble de la Fortia.

La désagrégation mécanique donne naissance à de grandes traînées d'éboulis anguleux sur les pentes. Parfois — mais c'est assez rare dans la vallée du Rhône — il y a entraînement de terra-rossa remaniée, argile rouge de décalcification provenant des lapiaz ou dolines bordieres (traumatismes karstiques) de l'Isthme Durancien.

Le plus souvent, à la base de ces collines calcaires ces éboulis viennent plus ou moins se mélanger ou recouvrir soit d'anciens lits de petits graviers du Rhône (Guilherand), soit des marnes effritées du miocène (région de Gigondas).

Ainsi donc nous nous trouvons en présence d'un sol d'érosion peu profond, constamment remanié par les eaux de ruissellement qui enlèvent certains éléments fins et qui apportent de nouveaux matériaux en voie de désagrégation.

Les travaux culturaux tendant à maintenir ces sols en place et à ralentir les effets de l'érosion.

— Les sols d'érosion sur les marnes du miocène et du pliocène sont des sols endodynamomorphes très peu différenciés de leurs roches-mères.

La mollasse miocène relevée le long des collines et plateaux calcaires est soumise presque partout à l'érosion intense due au ruissellement et ne forme, pour ainsi dire, aucun sol.

Dans les bassins d'ennoyage, la désagrégation de la roche-mère donne un sol squelettique où l'humus est rare. Dans certains cas la sécheresse de l'ambiance est atténuée grâce à un sol un peu plus profond et siliceux (mollasse sableuse).

Après le retrait de la mer à la fin du Miocène (Pontien), la vallée du Rhône subit une dernière invasion de la Méditerranée, au Plaisancien.

Les dépôts d'argile et de marnes formées à cette époque, pas plus d'ailleurs que ceux de la mollasse, ne fournissent de sols. Les vignobles situés sur les pentes des collines du Plaisancien sont donc des sols d'érosion non différenciés de leur roche-mère.

— Les sables de l'Astien ne donneraient qu'un sol très aride et presque stérile si celui-ci ne bénéficiait pas d'une part des apports, par ruissellements (alluvions colluviales) de certains matériaux provenant des terrasses du silicien qui le surplombent (région de Tavel, Roquemaure, Lirac et Saze, dans le Gard), et si d'autre part, la plus grande partie de ces sols plantés en vignes ou arbres fruitiers ne trouvaient

à une faible profondeur (60 à 80 cm.) des marnes d'abord sableuses puis plus compactes du plaisancien. Celles-ci facilitent presque partout, l'établissement d'un niveau hydrostatique (nappe phréatique) combattant ainsi la sécheresse des horizons superficiels. (Importance de l'étude du profil hydrique.)

Grâce au ruissellement intense et à la mise en mouvement d'un peu de silice dans les eaux, le phénomène de silicification se produit à certains endroits et donne naissance à une faible profondeur à des bancs de grès, véritable alios. Ce phénomène marque sans conteste, dans ces sols, une évolution pédologique ; il a son importance pour l'agriculteur au moment des plantations.

— Sol brun-rougeâtre sur alluvions fluviatiles anciennes du Rhône et de ses affluents.

Le réseau hydrographique préplaisancien, ancêtre du réseau actuel, était venu évider les anciennes plaines mollassiques que le remblaiement miocène n'avait pas complètement oblitérées.

Après le dernier passage de la mer, au Plaisancien, le Rhône et ses affluents (Isère et Durance notamment) ont progressivement rempli ces dépressions avec des sables et des graviers (Villafranchien), puis avec des cailloutis et limons (fin du tertiaire et quaternaire).

Ce phénomène d'alluvionnement, qui continue encore de nos jours, a pris, aux époques glaciaires, une ampleur considérable. La formation des terrasses, dans la vallée du Rhône n'est pas toujours très nette, le régime du fleuve ayant varié au cours du Quaternaire avec déplacements latéraux des thalwegs. Les affluents ont formés des cônes de déjections et des nappes de cailloutis ; toutes ces surfaces ont subi des dénivellations s'expliquant par des mouvements du niveau de base (théorie eustatique de *Deperret* et de *Lamothe*).

Les alluvions anciennes, dont les matériaux sont d'origine cévenale ou alpine, présentent une grande variété de cailloux roulés (galets de roches cristallines, de quartzites, cailloux feldspathiques assez friables, roches calcaires. etc.). Les éléments fins de remplissage suivant l'origine sont siliceux (généralement sur la rive droite du Rhône) ou calcaires (le plus souvent sur la rive gauche).

Ces alluvions ont subi deux phénomènes géogeniques importants : la *décalcification* et la *rubéfaction*. La décalcification de la surface s'opère facilement sans être totale,

toutefois, avec formation d'un poudingue à 3 ou 4 mètres ; des lits calcaires friables de néoformation et de calcite s'observent souvent à certains niveaux. Suivant l'âge de la terrasse l'altération est plus ou moins avancée ; très poussée dans la Costière du Gard elle l'est beaucoup moins dans la Crau de formation plus récente (Würmien). Cette décalcification est toujours accompagnée de formation d'argile résiduelle, très souvent colorée en rouge et parfois entraînée.

Le lessivage des ions minéraux basiques (Ca-Mg-K) est également très net sur certains points.

La rubéfaction est due à la migration des sels de fer peptisés par un colloïde protecteur, la silice. Si les éléments fins de remplissage ne sont pas calcaires, on observe une migration vagabonde à travers toute la masse de la roche-mère et une teinte rouge-brun colore la terrasse sur une assez grande épaisseur (cas de la Costière du Gard et des alluvions de la rive droite).

La coloration se cantonne dans les horizons supérieurs quand la décalcification n'est pas profonde. Souvent la couleur rouge vire au brun en surface à cause de l'humus (phénomène biogénique).

Enfin, quand les élément fins de remplissage ne contiennent pas de silice et sont calcaires, la migration n'a pas lieu et une teinte grise uniforme colore ces alluvions (terrasses de certains affluents de la rive droite de la Durance notamment).

Les alluvions anciennes qui apparaissent au confluent de l'Isère et du Rhône (Région des Chassis, Valence et Cornas), où elles sont ici d'origine fluvio-glaciaires, prennent une grande extension dans la basse vallée du Rhône.

Dans cette région, sous le climat méditerranéen, la flore autochtone de ce type de sol est constituée par des associations végétales dégradées (taillis xero-héliophiles) conduisant sur calcaire à la Garrigue et sur silice au Maquis, végétation remplaçant l'antique forêt d'yeuse (*Quercus ilex*) détruite par l'homme et qui ne se régénérera plus. Celle-ci, dont on retrouve encore des témoins épars, reposait sur différents substratum (sols bruns sur terrasses et sur calcaires, terra-rossa remaniée, randzines, sols squelettiques divers, etc...) et constituait le climat végétal méditerranéen (*Quercetum ilicis Gallo provincialis* de *Braun-Blanquet*). Cette association a joué un rôle indéniable dans la formation de ces sols en favorisant l'établissement d'un micro-climat assez humide sous un climat général semi-aride.

On peut donc considérer ce type de sol brun sur allu-

vions anciennes comme un pédoclimax. *Il s'agit d'un sol brun, plus ou moins lessivé et souvent remanié* (mélange d'alluvions colluviales et éoliennes). (Types N_1 et N_2 de la classification).

Voici, à titre d'exemple, l'examen d'un profil situé à Châteauneuf-du-Pape (Vaucluse) dans le domaine de « La Fortia », qui produit un des meilleurs crus.

A_0 n'existe pas ; la forêt de chênes verts ayant été défrichée depuis longtemps, la culture de la vigne mélange les horizons superficiels.

A, de 0 à 70 cm. — Sol brun-rougeâtre, non calcaire, riche en cailloux siliceux, la proportion de terre fine décroissant avec la profondeur :

0-20	81,5 %
20-40	74 %
40-70	36 %

La réaction est encore faiblement alcaline pH = 7,2.

B^1-70-80 cm. — Sol brun-rougeâtre, calcaire, très riche en cailloux siliceux (terre fine 26 %), certains portant des empreintes calcaires.

Réaction nettement alcaline pH = 7,6.

B^2-80-90 cm. — Cailloutis partiellement consolidés par un ciment calcaire.

B^3-90-93 cm. — Croûte calcaire de néoformation. Au-dessous une couche de 7 cm. de sable calcaire et un cailloutis calcaire plus ou moins consolidé par places, qu'il est difficile de considérer comme la Roche-Mère. Nous estimons que celle-ci, vu sa faible épaisseur, a subi partout une transformation.

Profil hydrique. — Les pluies s'infiltrent parfaitement dans le sol et sont draînées par le cailloutis du sous-sol, la croûte calcaire B^3 étant fissurée.

Pendant la saison chaude l'horizon A ne bénéficiant pas d'une remontée du sous-sol et l'évaporation étant très intense, la vigne souffre souvent de la sécheresse, bien qu'elle soit greffée sur le Rupestris du Lot à racines pivotantes profondes :

La présence des cailloux et les travaux aratoires superficiels atténuent dans une certaine mesure les excès de la sécheresse estivale.

Analyses mécaniques des types de sols des vignobles des " Côtes-du-Rhône "

	1			2		3	4	5	6	7
	Ao	A	Cl	A	Bl					
pH	7,0	7,3	7,1	7,2	7,6	7,6	6,0	8,0	8,2	8,0
Sable grossier : calcaire %	0	0	0	0	1,6	2,4	0	19,0	0,5	5,7
Sable grossier : siliceux %	25,1	27,1	17,9	54,9	43,0	53,3	77,1	4,8	0,4	54,2
Sable grossier : total %	25,1	27,1	17,9	54,9	44,6	55,7	77,1	23,8	0,9	59,9
Calcaire fin %	0	0	0	0	0,2	0,5	0	40,2	36,5	5,5
Calcaire total %	0	0	0	0	1,8	3,9	0	59,2	37,0	11,2
Sable fin siliceux %	25,6	30,7	22,0	15,1	18,9	21,1	8,9	9,5	10,3	21,6
Sable fin total %	25,6	30,7	22,0	15,1	19,1	22,6	8,9	49,7	46,8	27,1
Limon %	12,4	12,7	9,5	16,5	14,5	10,5	5,5	14,5	28,8	9,0
Argile %	23,9	25,9	49,2	10,0	19,0	7,5	4,5	9,5	20,3	1,0
Mat. organiques %	13,0	3,6	1,4	3,5	2,8	3,7	4,0	2,5	2,0	3,0

	Classification	
1. Sol brun sur alluvions anciennes à Morières (Vaucluse)	N_1	— 16
2. Sol brun sur alluvions anciennes à Châteauneuf-du-Pape (Vaucluse)	N_2	— 42
3. Sol d'érosion issu de micaschistes, à Ampuis (Rhône) (1)	Sols très peu évolués	— 28
4. Sol d'arène granitique à Tain-L'Hermitage (Drôme)		— 28
5. Sol sur éboulis calcaires à Guilherand-les-Saint-Péray (Ardèche)		— 28
6. Sol d'érosion sur marnes plaisanciennes à Fournès (Gard)		— 28
7. Sol squelettique sur sable de l'Astien, à Roquemaure (Gard)		— 23

(1) Quelques cailloux calcaires provenant d'une terrasse supérieure.

V. — Rapport entre ces types de sols et la qualité des vins

Contrairement à ce que l'on pourrait croire, la plus grande partie du vignoble des « Côtes-du-Rhône » repose sur des terrains peu ou pas calcaires, à l'exception des types de sols sur éboulis calcaires et sur marnes du miocène et du pliocène. Les vignobles méridionaux de la vallée du Rhône, de la

plaine du Comtat et du Languedoc sont situés, au contraire, sur des alluvions récentes assez riches en carbonate de chaux.

Nous devons ajouter que cette simple observation qui, par ailleurs, a une certaine importance, n'influe en rien sur la qualité des vins et que, seuls, d'autres caractères des sols sont susceptibles d'exercer dans ce sens une influence heureuse.

En effet, la pédologie nous montre que ce sont bien les sols squelettiques et d'érosion, peu profonds, par conséquent, assez arides, qui représentent pour les vignobles de Crus des terrains de prédilection.

Il est même assez curieux de constater que chacun de ces types de sol imprime aux vins des caractères de qualité différents que nous trouvons réunis au maximum dans certaines localités où les conditions de sol, d'exposition et de micro-climat sont les meilleures.

C'est ainsi qu'à chaque type de sol correspond au moins un Cru réputé :

Au premier type (sol d'arène gneissique) nous avons les Crus des « *Côtes-Rôties* » (vin rouge) et de *Saint-Péray* (vin blanc) ;

Au deuxième type (sol d'arène granitique) nous avons celui de *l'Hermitage* ;

Au cinquième type (sol squelettique sur sables de l'Astien) nous possédons toute la série des vins rosés d'*Orsan*, *Chusclan*, *Lirac*, etc..., avec en tête le Cru de *Tavel*.

Au sixième type (sol brun rougeâtre sur alluvions anciennes fluviatiles) nous avons toute la gamme des vins corsés des Côtes-du-Rhône, depuis *Cornas* jusqu'au *Rasteau* et dont le « *Châteauneuf-du-Pape* » est, sans contredit, le Roi.

Au troisième type (sol sur éboulis calcaires) nous trouvons que peu de vignobles, mais dont nous détachons nettement celui de *Guilherand-les-Saint-Péray*.

Enfin, *au quatrième type* (sol sur marnes du miocène et pliocène), sol qui est souvent associé au 3e et au 6e, nous pouvons mettre en vedette les vins de *la région de Gigondas*.

Et pour montrer à quel point le sol est le facteur prédominant, donnant aux vins certaines qualités communes à chaque type de sol, nous citerons un exemple :

Les vins de *Cornas* (Ardèche), dont les plants sont sur alluvions anciennes diffèrent, nettement de ceux de *l'Hermitage* (Drôme) tout proche (sur arène granitique) quoique issus du même cépage : la Syrah. Mais, par contre, ils se rapprocheraient des vins de *Châteauneuf-du-Pape* (Vaucluse) produits sur le même type de sol et pourtant le climat, l'exposition et les cépages ne sont pas les mêmes.

Ce goût de « terroir » permet aux dégustateurs avertis de trouver des nuances dans la qualité des vins. C'est ainsi qu'à la « Côte-Rôtie », ils distinguent nettement ceux qui proviennent de la côte brune, de ceux de la côte blonde.

CONCLUSIONS

Nous avons essayé au cours de ce rapport et en établissant la carte pédologique des « Côtes-du-Rhône », de montrer l'importance du facteur SOL dans la production végétale appliquée à la culture des vignobles de qualité.

Les méthodes pédologiques actuelles nous permettent déjà de dégager certaines caractéristiques importantes au point de vue oénologique.

La grande diversité des sols du Midi de la France qui occasionne tant de difficultés à nos pédologues dans l'exécution de leurs recherches, nous assure par contre d'avoir presque toujours dans certaines régions un maximum de *qualité* de nos récoltes.

La notion de *Cru* pour tous nos produits agricoles que l'on obtiendra par la bonne adaptation au milieu sol et au climat des divers systèmes de culture et qui est déjà si connue pour nos vins de France, doit rester à la base de notre politique agricole actuelle.

C'est pourquoi nous sommes persuadés du rôle important que doit jouer la Science du Sol, qui, aujourd'hui, dans le cas qui nous intéresse, nous permet de comprendre ce que nos vignerons ont pu obtenir *par empirisme* au bout de tant d'années d'efforts et de tâtonnements et qui, demain, pour d'autres cultures, nous conduira plus sûrement et plus rapidement à des résultats pratiques, d'une façon *systématique*.

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CONTRIBUTION A L'ÉTUDE DES TYPES DE SOLS DE LA BASSE VALLÉE DU RHONE

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DEUXIÈME MÉMOIRE

SOL D'ÉROSION SUR MARNES PLAISANCIENNES

AVEC LA COLLABORATION DE

M. JOESSEL et **M. MATHIEU**

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Hommage d'un collaborateur
J. Mathieu

CONTRIBUTION A L'ÉTUDE DES TYPES DE SOLS DE LA BASSE VALLÉE DU RHONE (1)

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Avec la collaboration de **MM. JOESSEL** et **MATHIEU**

I. d. : 631.481.

AVANT-PROPOS

L'étude des différents facteurs intervenant dans la genèse des sols de la Basse-Vallée du Rhône, objet de notre premier mémoire (1), avait pour but de servir de base aux recherches plus détaillées des différents types de sols de cette région. Cette étude est faite suivant les méthodes pédologiques connues et de façon à dégager le sens des caractéristiques essentielles au point de vue agronomique.

Pour chaque type de sol, le plan général adopté sera le suivant:

Introduction.

I. **Etude géologique et orogénique.**
II. **Etude du sol en place :**
  a) *évolution pédologique;*
  b) *données analytiques;*
  c) *propriétés physiques;*
  d) *flore-autochtone.*
III. **Vocation culturale.**
Conclusion.

(1) J. Bordas : Conditions générales de formation des sols de la Basse-Vallée du Rhône. Etude des différents facteurs intervenant dans la genèse; *Ann. Agron.*, n° 1, 1937, pp. 33-60.

Introduction

Les dépôts marins du Plaisancien sont surtout constitués par des marnes connues sous le nom de marnes « sub-apennines » et en France sous celui de « marnes et faluns de Saint-Ariès », près Bollène (Vaucluse).

Ces sédiments marneux dont l'altération est lente ont été soumis depuis le début du quaternaire à un ravinement intense qui continue encore de nos jours, favorisé, en maints endroits, par le relief actuel. C'est pourquoi on constate la disparition du peu de sol formé que la végétation, d'autre part, n'a pas pu fixer.

Nous aurons donc affaire à un sol très peu évolué et peu différencié de la Roche-Mère (sol endodynamomorphe). Il rentre dans la catégorie *de sols d'érosion ou squelettiques.*

Nous le considérerons toutefois comme « type de sol », étant donné qu'il représente une unité régionale avec ses caractères propres au point de vue géobotanique et agronomique.

L'étude *in situ* a eu lieu dans la région des « fosses de Fournès » (Gard), où les dépôts du Plaisancien, encore en place en raison des conditions topographiques, sont venus remblayer en partie la « dépression Pujaut-Nîmes », cassure conforme à la direction varisque de la chaîne hercynienne (Cévennes).

I. Etude géologique et orogénique.

La mer plaisancienne ou messinienne a envahi une dernière fois le bassin du Rhône et est remontée jusqu'aux portes de Lyon en formant un véritable fjord.

Elle a recouvert graduellement les thalwegs, s'avançant au-devant des eaux fluviales du réseau hydrographique préplaisancien.

Le Rhône d'alors et ses affluents, cours d'eaux très puissants, arrachaient aux dépôts antérieurs des fragments de roches qu'ils roulaient en les entraînant avec eux. Telle est l'origine des galets, calcaires, pour la plupart, que l'on voit à la base du plaisancien à Théziers (Gard).

Les dépôts argilo-sableux et surtout marneux du plaisancien, que nous allons décrire, ont été en partie enlevés par les cycles d'érosion du Quaternaire ou recouverts d'alluvions fluviatiles anciennes.

Des affleurements importants se trouvent dans la Dépression Pujaut-Nîmes (Gard) et dans le bassin de Visan (Vaucluse-Drôme). Des lambeaux apparaissent encore sur les deux rives du Rhône à Bourg-Saint-Andéol, Chusclan (rive droite) et à Bollène, Cairanne, Violès, Joncquières (rive gauche) (voir carte schématique, p. 47).

Le premier dépôt que nous trouvons à la base est une couche argileuse à *Congéries*, qui permet de repérer la limite d'extension maxima de la mer plaisancienne, car nous avons affaire à des dépôts d'estuaires n'apparaissant que sur les anciens rivages pliocènes.

Découvertes par *Mayer* (8) à Bollène, les couches à *Congéries* ont été retrouvées par *Tournouër* (9) à Théziers et par *Fontannes* (5) dans l'Ardèche, au Défilé de Donzère et près de Pont-Saint-Esprit.

Actuellement, presque tous les genres de la faune de Théziers sont refugiés dans les estuaires du Dnieper, du Dniester, du Don, dans les mers Caspienne et Aral (*Joleaud*) (6).

Ces couches à *Congéries* sont figurées, quand elles affleurent, par la lettre P sur les cartes géologiques feuilles d'Avignon et d'Orange.

Les dépôts plaisanciens proprement dits sont constitués de la façon suivante (*L. Joleaud*) (7) :

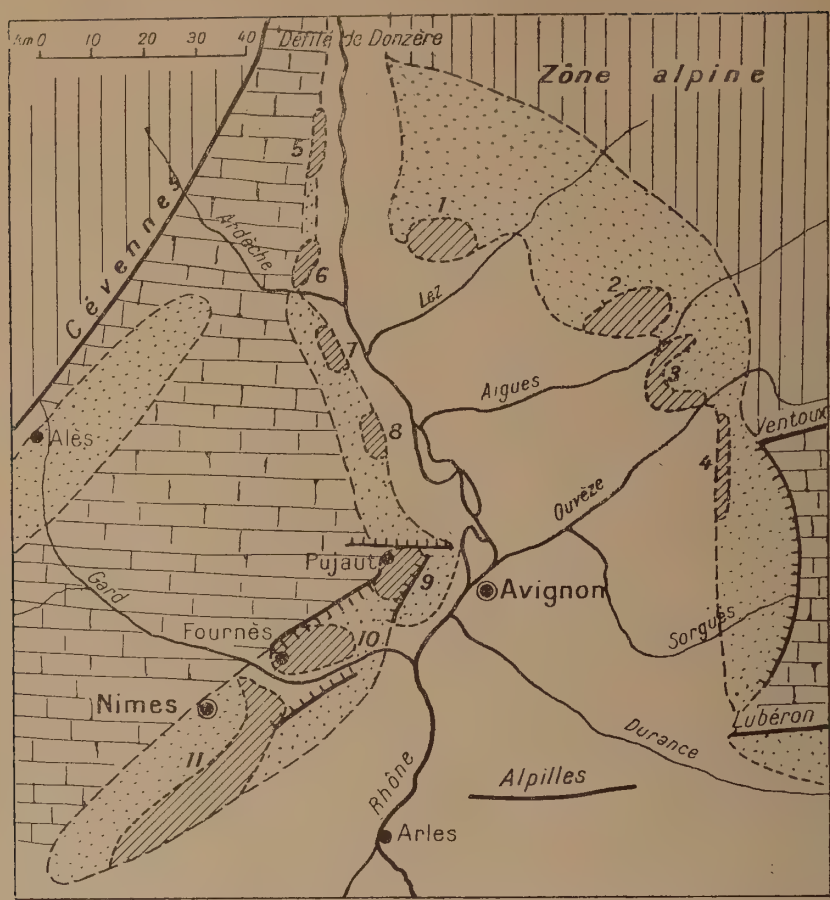
1° A la base, par des argiles jaunâtres à *Ostrea cochlear* qui, dès le début de la période, se déposent dans la zone marine peu profonde, à petite distance des estuaires. Au fur et à mesure de la transgression plaisancienne, congéries et huîtres remontent les anciens thalwegs pour aller prendre possession de nouveaux domaines.

2° Par des argiles sableuses à *Cerithium vulgatum* déposées au voisinage des roches crétacées, notamment à Saint-Amand (Théziers) et à Saint-Ariès (Vaucluse).

3° Par des argiles à brachiopodes et polypiers, formes de la zone corallienne, associées à des lamelli-branches (*Pecten, Ostrea, Hinnites, Anomia,* etc...).

Ainsi, les courants marins mélangeaient parfois au pied des falaises des coquilles de provenance très différentes au point de vue bathymétrique.

Cette faune mixte s'observe nettement dans le Gard, le long de la falaise de Roquemaure (faille du Lampourdier) où *Caziot* (4) a pu ainsi constater que la mer plaisancienne s'est élevée jusqu'à 176 mètres.



Plateaux et collines calcaires de l'isthme Durancien

Bassins d'ennoyage_ Remblaiement miocène et pliocène

Alluvions quaternaires — Failles importantes

Dépôts plaisanciens : 1_St Ariès, 2_Visan, 3_Villedieu, 4_Violés, 5_Bourg-St Andéol, 6_St Just, 7_St Alexande, 8_Chusclan, 9_Pujaut, 10_Fournès, 11_Bellegarde

4° Enfin par des argiles grises à *Armussium cristatum*. En dehors du littoral l'affaissement continu du sol avait donné naissance à de véritables fosses où s'accumulaient des vases bleuâtres; les fossiles y sont plus rares; toutefois, M. Bartesago, géologue à Avignon, a recueilli et nous a montré des formes franchement bathyales (*Pleurotoma rotata* et *Surcula dimidiata*).

Ces argiles à *Armussium* sont employées comme celles du Schlier, à la fabrication des tuiles et briques (Bagnols-sur-Cèze, Laudun, Théziers, etc...).

On admet qu'un mouvement épeirogénique a relevé vers l'est tout le système plaisancien. Toutefois, si les marnes de la région de Théziers, dans le Gard, semblent à peu près horizontales, celles du bassin de Visan (Vaucluse) sont légèrement déformées (mouvements de la couche à *Cerithium vulgatum* en particulier).

FIG. 2. — Les « Fosses de Fournès » (Gard). Au premier plan, la partie basse; à droite, *tamarix gallica*.

II. Etude du sol en place.

a) *Evolution pédologique :*

Cette étude a eu lieu entre Fournès et Domazan (Gard), région où les marnes plaisanciennes affleurent sur une assez grande étendue et où nous avons trouvé un sol en place, non remanié et non cultivé (fosses de Fournès).

L'étude pédologique, *in situ*, est réduite à sa plus simple expression; nous avons dit, en effet, que le sol formé aux dépens de ces dépôts plaisanciens est pour ainsi dire inexistant (sol d'érosion).

En effet, cela se conçoit aisément d'abord par la nature même de la roche-mère (marnes) ne se prêtant qu'à la constitution d'un sol squelettique et ensuite par l'étude géologique et orogénique de la région (voir premier mémoire déjà cité);

celle-ci nous montre que, dès le retrait de la mer plaisancienne, le réseau hydrographique puissant du Bas-Rhône est venu recouvrir les dépôts antérieurs par des sables, graviers, cailloutis et limons (certains sont éoliens) venant ainsi contrarier la genèse de ces sols.

Nous en avons un exemple à l'endroit même où nous avons fait notre étude.

Encastrés entre les deux massifs calcaires formant la bordure (faille) de la « dépression Pujaut-Nîmes », les dépôts plaisanciens l'ont remblayée en partie.

Ils apparaissent en maints endroits (Pujaut, Fournès, Théziers, Bellegarde, Génerac) où en raison des conditions topographiques ils présentent un faciès d'érosion, notamment sur les deux côtés du thalweg du Gardon qui vient couper perpendiculairement cette dépression plaisancienne.

Mais la plus grande partie des marnes du Plaisancien sont recouvertes soit par des alluvions fluviatiles anciennes (terrasses pliocènes et pléistocènes du Rhône : terrasses de 150 m. de Domazan et de Saint-Gilles, terrasses de 100 m. et de 60 m. de la Costière du Gard (1), soit par des alluvions fluviatiles modernes (anciens étangs de Pujaut et de Rochefort), ou enfin par des alluvions éoliennes (Saze) donnant ainsi à ces régions un sous-sol caractéristique.

En effet, ces marnes plaisanciennes forment le niveau de la nappe phréatique dans le thalweg du Gardon et quand elles sont à faible profondeur (plateau de Domazan) elles influent sur l'orientation pédologique des divers sols alluviaux en formation augmentant dans certains endroits le caractère d'aridité de la Garrigue sus-jacente.

b) et c) *Données analytiques et propriétés physiques.*

Nous avons prélevé des échantillons pour analyses à Fournès :

1° Dans la roche-mère : marne jaune à *ostrea,* partie haute en place et marne grise à *armussium,* partie en pente soumise à l'érosion;

2° Dans deux sols cultivés sur marnes plaisanciennes cor-

(1) Nous indiquons l'altitude des terrasses telle qu'elle figure sur la carte géologique d'Avignon (dernière édition), mais nous faisons remarquer que les géologues sont loin d'être d'accord sur ces différents niveaux.

respondant l'un à la partie haute, l'autre à la zone en pente (thalweg rive gauche du Gardon). Les résultats analytiques sont les suivants :

TABLEAU

ÉLÉMENTS	MARNE JAUNE A OSTREA	MARNE GRISE A ARMUSSIUM	SOL N° 1 PARTIE HAUTE	SOL N° 2 PARTIE EN PENTE
Sable grossier calcaire %	0	0	0,5	2,5
— siliceux %	0	0	0,4	2,9
— total %	0	0	0,9	5,4
Calcaire fin %	30	30	36,5	29,5
Calcaire total %	30	30	37,0	32,0
Sable fin siliceux %	11	15	10,3	22,8
Sable fin total %	41	45	46,8	52,3
Limon %	38	33,5	28,8	20,2
Argile %	20,5	20,5	20,3	19,5
Matière organique %	0	0	2	2
Azote total 0/00	0,42	0,63	0,70	0,84
P^2O^5 assimilable 0/00	0,45	0,15	0,35	0,45
K^2O 0/00	0,58	2,0	0,48	0,48
Chlore en NaCl 0/00	2,8	2,6	0,05	0,05

La proportion d'argile est la même dans tous les échantillons. Le calcaire ne varie pas sensiblement, mais les éléments grossiers inexistants dans la roche-mère apparaissent nettement dans l'échantillon prélevé sur sol cultivé dans la partie en pente (influence des phénomènes colluviaux).

D'après ces analyses mécaniques (type international) et la terminologie généralement adoptée en France, ces marnes plaisanciennes font partie des *terres argilo-calcaires* (1).

Ces sols, même les roches-mères, sont relativement riches en éléments fertilisants, notamment en potasse.

Enfin, fait assez curieux, ces marnes plaisanciennes (roche-mère) sont encore nettement salées.

Le chlorure disparaît rapidement dès que l'on cultive le sol.

Il ne s'agit pas là d'un phénomène spécial aux marnes plaisanciennes, puisque plus haut, dans la vallée du Rhône, à Villedieu et à Violès (Vaucluse), ces mêmes dépôts ne contiennent que 0 gr. 2 à 0 gr. 25 de NaCl par kilogramme de terre et que, d'autre part, ainsi que nous le verrons plus tard, certaines mollasses du Miocène (à Mouriès en bordure de la dépression des Baux, Bouches-du-Rhône), peuvent être également salées (plus de 3 gr. de NaCl). Dans ces deux cas, nous avons affaire à des dépôts de fosses profondes où, sans doute, l'évacuation

(1) DEMOLON : *Dynamique du sol*, Dunod, édit., p. 118.

des eaux après la régression de la mer a dû être très lente, l'évaporation jouant très probablement un rôle primordial.

Nous remarquons qu'à Pujaut, bordure septentrionale de la dépression plaisancienne étudiée, la salure des marnes, quoique moins accentuée, accuse encore 0 gr. 85 de NaCl par kilogramme de terre.

d) *Flore autochtone :*

Nous n'avons nullement la prétention, dans ce court paragraphe, de donner un relevé complet de la flore et moins encore de faire de la phytosociologie, science qui a pour but d'individualiser les groupements végétaux et leurs faciès, d'approfondir les recherches sur la vie sociale, la synécologie et la genèse des associations. Nous voulons simplement faire part de quelques observations botaniques que nous avons pu faire et montrer le rôle de l'évolution de certains groupements végétaux qui va de pair avec l'évolution du sol.

Au cours de nos tournées, faites au printemps 1937 à Fournès, nous avons pu différencier les zones de végétation suivantes :

1° Au sommet des marnes plaisanciennes, recouvertes par endroits par une faible couche de cailloutis de la terrasse de Domazan (145 mm.), et sur les pentes douces formées par les éboulis de ces marnes mélangés à des cailloux de la terrasse, nous observons une pelouse, en général serrée, de *Brachypodium ramosum* avec, par places, des vestiges de strates arborescentes et arbustives marqués par la présence d'individus isolés ou de petits taillis de *Quercus Ilex, Quercus pubescens, Quercus coccifera, Phylliraea angustifolia, Rhammus infectoria, Pirus amygdalaeformis.* Cette zone nous paraît être une phase regressive du *Quercetum Ilicis* primitif (Forêt d'Yeuse méditerranéenne) (*Braun-Blanquet*) (3).

Nous avons noté également la présence des plantes suivantes :

Fumana Spachii; Polygala vulgaris; Linum corymbulosum; Linum tenuifolium; Silene inflata; Dianthus caryophyllus; Genista Scorpius; Dorycnium suffruticosum; Psoralea bituminosa; Astragalus monspessulanus; Coronilla minima; Hippocrepis ciliata; Hippocrepis glauca, Onobrychis supina; Poterium Magnolii; Eryngium campestre; Rubia peregrina; Helychrysum Stoechas; Hieracium Pilosella; Lavendula latifolia; Thymus vulgaris; Teucrium Chamaedrys; Teucrium Polium; Thesium divaricatum; Camphorosma

monspeliaca; Euphorbia serrata; Aphyllanthes monspellensis; Orchis longibracteata; Orchis simia; Loroglossum hircinum; Ophrys aranifera; Koeleria vallesiaca; Dactylis glomerata; Bromus erectus.

2° Dans les zones remaniées par le ruissellement ou la culture et où se sont accumulés en surface les cailloux roulés de la terrasse, nous avons observé :

Diplotaxis tenuifolia; Cerastium pumilum; Cytisus argenteus; Melilotus sulcata; Medicago praecox; Medicago Gerardi; Medicago polycarpa; Trifolium stellatum; Trifolium angustifolium; Trifolium campestre; Trifolium scabrum; Trifolium resupinatum; Ononis minutissima; Astragalus Stella; Coronilla scorpioïdes; Vicia peregrina; Poterium Magnolii; Sedum altissimum; Eryngium campestre; Scabiosa maritima; Hedypnoïs polymorpha; Pterotheca sancta; Barkhausia taraxacifolia; Hieracium Pilosella; Thymus vulgaris; Plantago coronopus; Camphorosma monspeliaca; Erythraea pulchella; Euphorbia serrata; Dactylis glomerata; Koeleria phleoïdes; Brachypodium ramosum; Brachypodium distachyon; Œgilops triuncialis; Œgilops ovata; Hordeum murinum; Bromus rubens; Lepturus incurvatus.

3° Sur les pentes abruptes, soumises à l'érosion, la végétation se raréfie; ne subsistent guère directement sur la roche-mère que : *Malcolmia africana, Erysimum tenuifolium, Convolvulus cantabrica, Camphorosma monspeliaca* et *Stipa capillata.* La camphorine et le stype, par leur système radiculaire développé, tendent à s'opposer à l'arrachement des marnes et forment par endroits de nombreuses buttes. Toutefois, sur ces dernières, le plus souvent surmontées seulement de l'une ou l'autre de ces plantes, nous avons pu noter par endroits la présence des végétaux suivants qui y sont associés :

Linum corymbulosum; Eryngium campestre; Scabiosa maritima; Picridium vulgare; Dactylis glomerata; Brachypodium ramosum; Kœleria vallesiaca; Bromus rubens.

4° Dans la zone basse, la state inférieure est surtout constituée par *Brachyposium phoenicoïdes* et *Agropyrum repens* et la strate arborescente par *Tamarix gallica.*

Mais, avant l'installation définitive de ces deux Graminées, qui forment bientôt un revêtement compact, sur ces marnes se développent tout d'abord les espèces suivantes :

Diplotaxis tenuifolia; Medicago praecox; Medicago polycarpa; Medicago Gerardi; Trifolium angustifolium; Vicia hybrida; Inula

viscosa; Echinops Ritro; Urospermum Daleschampii; Convolvolus cantabrica; Chlora perfoliata; Salvia verbenaca; Dactylis glomerata; Cynodon dactylon; Hordeum murinum; Bromus rubens; Hedypnoïs polymorpha; Pterotheca sancta; Barkhausia taraxacifolia; Camphorosma monspeliaca.

En résumé, les pentes élevées, non encore dégradées par l'érosion, sont couvertes d'une végétation rappelant beaucoup par leur composition floristique le *Brachypodietum ramosi* de *Braun-Blanquet* (2), association à laquelle manquent toutefois un certain nombre de caractéristiques indiquées par cet auteur, notamment *Phlomis Lychnitis* et *Iris chamaeiris*, si fréquents par contre dans les garrigues caillouteuses de la région.

Sur les pentes soumises au ruissellement, la camphorine et le stype, qui s'opposent à l'érosion, impriment à la végétation, d'ailleurs très pauvre, un caractère tout à fait spécial.

Puis, dans les parties basses, sur les marnes entraînées, s'installe un *Brachypodietum phoenicoïdis*, presque typique avec *Tamarix gallica* comme strate arborescente.

Nous remarquons pour terminer la présence de certaines espèces comme *Camphorosma monspeliaca*, élective en Provence de l'association à *Crithmum maritimum* et *Statice minuta* (*Arenes*) (1), qui, en général, ne se rencontre guère en dehors des zones côtières. Y a-t-il lieu de faire un rapprochement entre cette présence et le degré de salure élevé de ces marnes?

III. Vocation culturale.

Les agriculteurs classent les marnes plaisanciennes parmi les « terres fortes ». Elles présentent certaines difficultés culturales accrues par le climat méditerranéen.

Les parties basses où l'eau pourra s'écouler seront humides d'octobre à avril; en été, tous ces sols, s'ils ne sont pas travaillés, se fendilleront, durciront et sècheront.

Les observations botaniques signalées dans le paragraphe précédent nous permettent de comprendre que, suivant la situation topographique, nous avons affaire à trois zones bien différentes :

1° Les parties hautes des collines et plateaux argileux qui sont et resteront incultes;

2° Les pentes et les éboulis de mi-coteaux où nous sommes

en présence de deux cultures caractéristiques des marnes plaisanciennes : l'*Abricotier* et la *Vigne*;

3° Les bas-fonds où l'écoulement de l'eau se fait soit naturellement, soit par des « roubines », endroits où nous trouvons quelques luzernières et un peu de céréales (orges et blés).

Il ne nous appartient pas dans le cadre de ce mémoire d'entrer dans le détail de la production agricole. Nous nous contenterons d'en indiquer les principales caractéristiques.

Fig. 3. — Vignes sur marnes plaisanciennes aux environs de Violès (Vaucluse).

La vigne est greffée sur Rupestris du Lot (Monticola) dont le système radiculaire assez puissant et profond semble bien adapté à ce type de sol.

Les cépages greffés sont généralement des plants fins : Grenache, Carignan, Clairette, quelques Alicante-Bouschet. Nous ne rencontrons que très peu d'hybrides producteurs directs (Couderc et Seibel).

Le rendement des vignobles à l'hectare est peu élevé (50 à 60 hectolitres maximum) et le vin, quoique de qualité légèrement inférieure à celui produit par les vignes situées sur les alluvions fluviatiles anciennes qui sont voisines, atteint et dépasse souvent 10° d'alcool (vins ayant droit, quant au sol, à l'appellation « Côtes du Rhône »).

Les abricotiers (variétés : Luizet, Rosé, Précoce de Boulbon, Muscat, Paviot, etc...) généralement cultivés dans la vallée du Rhône, sont beaux et semblent peu sensibles aux

maladies. Les traitements contre le Monilia et le Coryneum (les deux plus redoutables parasites de cet arbre dans nos régions) ne se font pas aussi assidument que dans la région vauclusienne de Carpentras-Malaucène (sol sur mollasse du miocène).

La céréale cultivée est surtout l'orge de printemps (pomelle) ; les blés sont rares (Tuzelle et surtout Seissette). La variété de Luzerne que l'on trouve est uniquement celle de Provence.

Amélioration à apporter à ces sols. — La pédologie nous montre que le sol est un système à évolution continue, mais lente; c'est pourquoi, en dehors des considérations de cet ordre (études des différents horizons notamment), nous devons, *là où les sols sont peu évolués*, tenir compte, avant tout, de l'altitude topographique relative, de la nature physique de la partie superficielle, du climat local, toutes conditions qui jouent un rôle prédominant dans les phénomènes d'écoulement naturel des eaux, d'aération du sol, d'activité microbienne, de rapidité de réchauffement des terres, etc...

Nous avons vu que le relief local et l'exposition des marnes plaisanciennes ont permis d'adapter différentes sortes de cultures. Ce choix empirique, dû au bon sens des agriculteurs, nous paraît être des plus judicieux. Les seules améliorations à conseiller sont celles ayant trait aux soins culturaux, à la défense contre les parasites, à l'emploi plus fréquent des amendements humifères et, enfin, en certains endroits, à un aménagement plus rationnel du plan d'eau (drainage).

Conclusions

Dans la classification schématique préliminaire en vue des premières études relatives à l'établissement d'une carte à grande échelle des sols de France, classification adoptée par l'Association Française pour l'étude du sol, les marnes plaisanciennes que nous venons d'étudier feront partie de la catégorie II et figureront comme « sols d'érosion ou squelettiques » nullement évolués par rapport à la roche-mère (représentation par des hachures). Il ne nous sera guère possible, dans le cas considéré, d'indiquer le type climatique vers lequel ils tendent à évoluer.

D'autre part, sur la carte, rien ne nous permettra de les

différencier des autres sols squelettiques (notamment ceux sur mollasse).

Pourtant, nous avons cru devoir leur réserver une étude spéciale, étant donné certains caractères géologiques, chimiques, botaniques et même agronomiques que nous avons essayé de mettre en évidence au cours de cette note.

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POITIERS. — IMP. MARC TEXIER

Figure 29.
Entrance to
Experiment
Station at
Avignon.

Figure 30.
Street in
Avignon.

Figure 31. Headquarters for field experimental fields near Avignon. (Irrigated alluvial soil).

Figure 32. Vineyard near Avignon. Irrigated silty clay alluvium. Note wind break.

Figure 33. Vineyard near Avignon.

Figure 34. Home on irrigated land near Avignon.

Figure 35. Making hay on farm near Avignon.

Figure 36. View of Chateauneuf de Gadogne near Avignon. Grapes on gray, silty clay alluvium, irrigated.

Figure 37. View from hill near Avignon. Olives and grapes in foreground on Non-Calcic Brown (?) soils.

Figure 38. View near Avignon.

Figure 39. View north of Marseilles.

Figure 40. View just north of Marseilles.

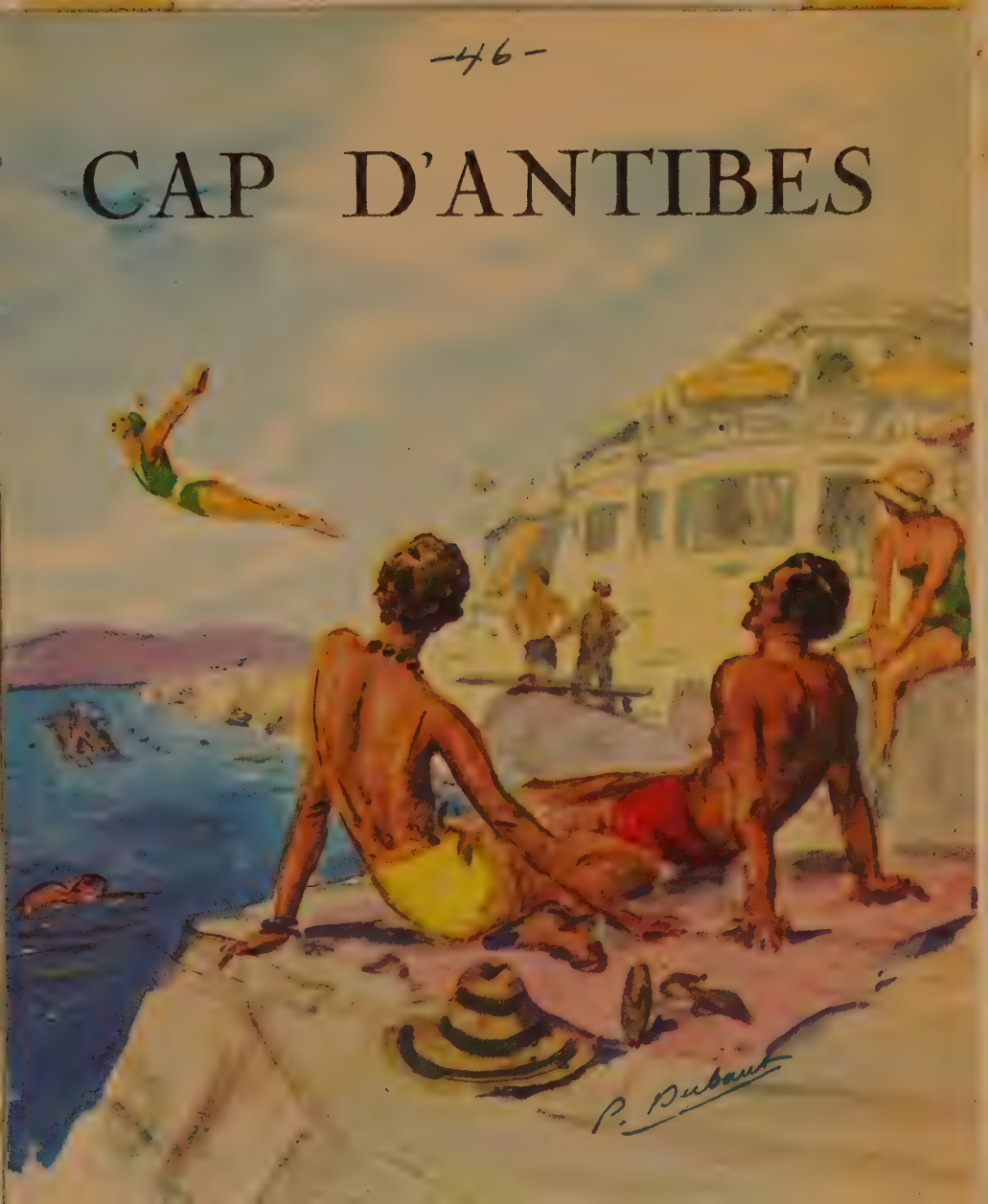
Figure 41. View near Cannes.

Figure 42. View at Cap-de-Antibes
from hotel window.

Avignon to Antibes

The country from Marseilles to Antibes is very beautiful. A rather narrow plain is squeezed in between the sea and the hills. In a few places valleys penetrate for some distance to the north but as one approaches the Italian frontier these hills merge into snow covered Alps and the coastal strip is very narrow. Most of the soil is red, probably Terra Rossa. The greater part of the land used for crops is on the undulating terraces, although some of the hills are farmed with the aid of wall terraces, used principally for water control. Much of the land is devoted to grapes and these are frequently interplanted with olives, cherries, and peaches. Most of the land is irrigated. The hills have thin grass and scattered dark green shrubs and resemble somewhat those of Utah. In the hills there are many ruins of old chateaus, small and large. Although many of the olive trees are very old they are trimmed to the size of 15-year old apple trees. Now, in May, the whole landscape is very beautiful. The houses are small-stucco with yellow, red, and brown tile roofs.

CAP D'ANTIBES



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Phot. Gilbert et Carron

Héliochromie SADAG Bellegarde

Antibes and Grasse

Although it rained continuously I was able to make a tour of the neighboring country with the soil expert of the experiment station in Antibes, located with the Jardin Thuret. Grasse is the great perfumery center and the main and almost only crop of the region is flowers for perfume -- roses, oranges, jasmine, etc. Most of the land is rolling

Figure 43. Flowers for the perfumeries growing on terraced Terra Rossa near Grasse.

and is terraced with stone and brick walls for water and erosion control. The soils are mostly of the Terra Rossa

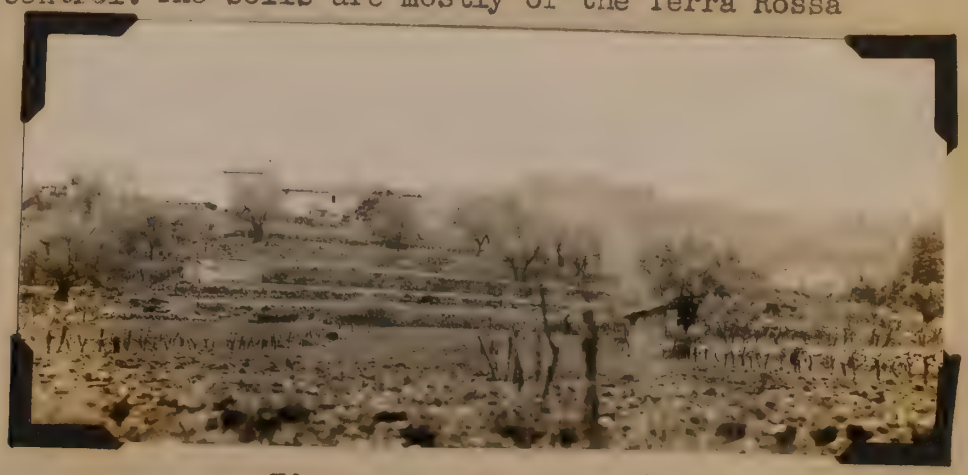

Figure 44. View near Grasse

group. They have a very dark brown to reddish-brown color and are developed from hard limestone materials under coniferous (mostly) forest. Also I saw Brown soils, somewhat like the

Figure 45. Terra Rossa near Grasse. Very dark brown soil developed from hard limestone under coniferous forest.

Terra Rossa but with more definite prismatic structure. Both soils, but especially the Terra Rossa, are low in organic matter, calcareous throughout (above pH 7.5) and show little, if any, movement of clay.

On steep slopes of gneiss I saw some soils showing definite evidences of eluviation: A_1--very thin; A_2--yellowish-gray; B_2--brown, slightly reddish; C(at 2 feet) grayish rotten gneiss, streaked with pale gray and pale red. These soils were developed under a pine forest, and although they have never been used for crops or grazing the soils are eroded due to frequent forest fires in this dry climate. The soils on these materials are the only ones that show any signs of eluviation in this region.

Figure 46. Experimental station for perfume plants at Grasse.

Figure 47. Terraces for water and erosion control on Terra Rossa soil near Grasse. Part of farm operated by a perfumery company. Such improved land is valued at about 100,000 francs per hectare.

Much of the land here is not as well cared for as formerly and the terraces are falling to pieces. I was told that this is due to the increase in industrial wages and a consequent movement away from the land. Also when the peasant boys return from their military service they find village life dull and many seek employment in the city.

Antibes to Florence

The country around the bay to Ventimille, and beyond is quite similar to that near Antibes. It seemed to me, however, that the Italian peasants were giving the land somewhat better care. The plain broadens and one sees many small farms

Figure 48. View near Reno, Italy.

well cared for, except for the weeds (poppies) in the wheat. There are many new works, houses, roads, channels, canals, etc. The hill land has walled terraces and is devoted to olives and fruits, including grapes. Most of the grapes were trained

Figure 49. View near Reno, Italy.

on arbors. As we approached Pisa we entered a great alluvial plain, apparently quite fertile, partly drained and partly

irrigated. The soils were dark grayish brown in color. From Pisa to Florence the train went through a great alluvial plain. The fields are small, one to four acres, and each is enclosed by a single or double row of fruit trees (peaches, etc.) or grapes, or, more commonly, both. In between is wheat mostly, but there are also oats, alfalfa, vegetables, flowers, etc. The wheat is sowed in strips of several single rows, separated by double rows.

Figure 50. A street scene in Florence near Santa Maria church.

Figure 51. Cellini's Perseus in the Piazza della Signoria in Florence and the entrance to the Palazzo Vecchio.

Figure 52. A soldier on guard in Florence! (about 10 to 12 years old)

Florence to Rome

This is the famous section of "hill towns." Most of the farmers live in these old, high, walled villages, although now there are some scattered farms and some modern villages along the railroad in the valleys.

Figure 53. Hill town near Orvieto, Italy.

The best land is that in the alluvial valleys. As far as I could see the soils were Brown Forest and Gray-Brown Podzolic. There were no red (or Red) soils and the landscape gives a definite appearance of being humid. Again we see small rectangular fields of 1 to 2 acres, bordered by fruit and mulberry trees and grapes. The chief crop is wheat, along with otas, alfalfa, and others.

Figure 54. View from train near Cherisi Bogni, Italy.

International Institute of Agriculture

At Rome I joined the other delegates and attended the meetings of the International Institute of Agriculture from May 23 to May 28, inclusive. The discussions were devoted to the past and future work of the Institute. Proposals were brought forward by the various delegates and discussed. Two of these were of particular interest to me: (1) Cooperation with the League of Nations on problems of nutrition; and (2) world survey of agricultural resources. In the former question we were able to get consideration given to the relationship between soils and soil management and the quality of food plants. The second resolution as adopted calls for the Institute to sponsor a world survey of climate, soils, and other factors of importance in defining agricultural possibilities.

The chief work of the Institute has to do with the assembly and publication of agricultural statistics. Since it is controlled by government representatives it must be very careful that its publications give no offense to any government. In this way it is unlike some other international bodies that are cooperatively financed but not cooperatively administered in the sense that all publications must be approved by each country.

This approval procedure of the Institute hampers any sort of interpretation of statistics and may handicap the Institute if it takes up wider and broader agricultural questions. At

present not much expansion can be undertaken due to limitations of funds, but I believe that the Institute can and should assume somewhat of a coordinating role among the several international societies dealing with agricultural affairs.

Delegates of the International Institute of Agriculture

SOCIETÀ "CAPANNELLE"
ROMA
Piazza Montecitorio, 115

Roma, 19 Maggio 1938-XVI

RECINTO DEL PESO

Il Presidente, in occasione della XIV Assemblea Generale dell'Istituto Internazionale d'Agricoltura, ha l'onore di invitare Monsieur C. C. Kellogg a voler assistere alle corse al galoppo che avranno luogo all'Ippodromo delle Capannelle nei giorni 22, 26, e 29 Maggio 1938-XVI.

22 Maggio	26 Maggio	29 Maggio

IL PRESIDENTE
G. Acerbo

The Right Honourable The Earl of Feversham

et la Délégation Britannique à la XIVème Assemblée

Générale de l'Institut International d'Agriculture prient

Monsieur C. E. Kellogg

de bien vouloir prendre part à la réception qui aura lieu au

Grand Hôtel le vendredi, 27 Mai 1938, à 21 heures 30.

(Habit)

R. S. V. P.

(Bureau du Cérémonial)

Tél. 31793 - 31794

IL GOVERNATORE DI ROMA SI PREGIA INVITARE LA S. V. O. AL RICEVIMENTO CHE OFFRIRÀ NEL PALAZZO DEI CONSERVATORI IN CAMPIDOGLIO SABATO 28 MAGGIO MCMXXXVIII - ANNO XVI - ALLE ORE 18 IN ONORE DELLE DELEGAZIONI UFFICIALI ALLA XIV ASSEMBLEA GENERALE DELL'ISTITUTO INTERNAZIONALE DI AGRICOLTURA.

IL PRESENTE BIGLIETTO È STRETTAMENTE PERSONALE.

N. 46

Carta d'identità rilasciata a l'

Dr. C. E. Kellogg

nella sua qualità di delegato degli Stati Uniti d'America alla XIV.ª Ass. Gen. dell'Istituto Internazio di Agricoltura.

Roma, li .....

p. Il Ministro degli Affari Esteri

The Ambassador of the United States of America and Mrs. Phillips at home

Thursday, May, 26
5,30 – 7 P. M.

Villa Taverna
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Le Président de l'Institut International d'Agriculture et la Baronne Acerbo de l'Aterno

prient M. le Dr. C.E.KELLOGG et Famille

de bien vouloir prendre part à la réception qui aura lieu au Palais de l'Institut lundi 23 Mai 1938, à 21 hs. 30, en l'honneur des Délégations officielles à la XIVème Assemblée Générale.

(Habit et décorations)

R. S. V. P.

Tél. 31793 - 31794 - 35969

XIVème SESSION DE L'ASSEMBLÉE GÉNÉRALE
DE L'INSTITUT INTERNATIONAL D'AGRICULTURE

XIVth MEETING OF THE GENERAL ASSEMBLY
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MEMBRES DES DÉLÉGATIONS

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MEMBERS OF DELEGATIONS

(PROVISIONAL LIST)

NOTE. — Voir le *Guide officiel des Délégués*, III/6, p. 3
NOTE. — See the *Delegates' official Guide*, III/6, p. 3

ROME

No. 1.
23 MAI 1938

XIVème SESSION DE L'ASSEMBLÉE GÉNÉRALE
DE L'INSTITUT INTERNATIONAL D'AGRICULTURE

XIVth MEETING OF THE GENERAL ASSEMBLY
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NOTE. — Voir le *Guide officiel des Délégués*, III/6, p. 3
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ROME

No. 1.
23 MAI 1938

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Le Dr. von der DECKEN.

De l'Institut pour l'étude des conjonctures.

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DANEMARK — DENMARK

M. J. C. W. Kruse.

Envoyé extraordinaire et Ministre plénipotentiaire près S. M. le Roi d'Italie – Délégué au Comité Permanent.

M. P. A. Moltesen.

Chef du Bureau du Conseil de l'Agriculture.

M. K. Bjerke.

Secrétaire au Département de la Statistique.

EGYPTE — EGYPT

M. M. Taher Al Omari.

Attaché agricole à la Légation à Rome – Délégué au Comité Permanent.

ESTONIE — ESTONIA

S. Exc. le Dr. M. J. Leppik.

Envoyé Extraordinaire et Ministre plénipotentiaire près S. M. le Roi d'Italie – Délégué au Comité Permanent.

ETATS-UNIS D'AMÉRIQUE
UNITED STATES OF AMERICA

The Honorable M. L. Wilson.

Under Secretary of Agriculture, Department of Agriculture.

Dr. A. G. Black.

Chief, Bureau of Agricultural Economics, Department of Agriculture

Mr. L. A. Wheeler.

In Charge, Foreign Agricultural Service Division, Bureau of Agricultural Economics, United States Department of Agriculture.

Dr. C. E. Kellogg.

Chief, Soil Survey Division, Bureau of Chemistry and Soils, Department of Agriculture.

Mr. L. V. STEERE.

Agricultural Attaché, American Embassy, Berlin.

Mr. L. G. MICHAEL.

Agricultural Attaché, American Legation, Belgrade.

Mr. J. C. MARQUIS.

Member of the Permanent Committee.

Dr. C. L. STEWART.

Professor of Agricultural Economics, University of Illinois.

Dr. J. K. GALBRAITH.

Professor of Economics, Harvard University.

Mr. A. S. ROGERS.

Secretary of Embassy, Rome – Secretary of the Delegation.

HAWAÏ — HAWAII

Mr. J. C. MARQUIS.

(Voir *Etats-Unis d'Amérique*).

(See *United States of America*).

ILES PHILIPPINES — PHILIPPINES ISLES

Mr. J. C. MARQUIS.

(Voir *Etats-Unis d'Amérique*).

(See *United States of America*).

ILES VIRGINIE — VIRGIN ISLANDS

Mr. J. C. MARQUIS.

(Voir *Etats-Unis d'Amérique*).

(See *United States of America*).

PORTO-RICO

Mr. J. C. MARQUIS.

(Voir *Etats-Unis d'Amérique*).

(See *United States of America*).

FINLANDE — FINLAND

Le Dr. Eemil HYNNINEN.

Ancien Ministre – Délégué au Comité Permanent.

M. J. H. KONTTINEN.

Conseiller référendaire – Secrétaire Général du Ministère de l'Agriculture.

FRANCE

M. A. MASSÉ.

Ancien Ministre.

M. J. FAURE.

Sénateur – Président de l'Assemblée permanente des Présidents des Chambres d'Agriculture.

M. ASTIER.

Ancien Député – Vice-Président de la Fédération nationale de la mutualité et de la coopération agricoles.

M. L. TARDY.

Directeur Général honoraire de la Caisse nationale de Crédit agricole – Président de la Société des Potasses d'Alsace.

M. M. ROLDES.

Député de l'Yonne – Président du Groupe parlementaire de la Coopération – Vice-président de la Commission de l'Agriculture de la Chambre des Députés.

M. CHAPLAIN.

Directeur Général des Eaux et Forêts.

M. M. AUGÉ-LARIBÉ.

Secrétaire Général honoraire de la Confédération nationale des Associations agricoles – Délégué au Comité Permanent.

M. P. GARNIER.

Expert technique au Ministère de l'Economie nationale.

M. PRAULT.

Directeur de l'Assemblée permanente des Présidents des Chambres d'Agriculture.

M. OLLIER.

Directeur adjoint de la Caisse nationale de Crédit agricole.

M. J. BERNARD.

Chef du Ier Bureau de la Direction des Affaires économiques au Ministère des Colonies.

AFRIQUE OCCIDENTALE FRANÇAISE
FRENCH WEST AFRICA

M. Augé-Laribé.

(Voir *France*).
(See *France*).

MADAGASCAR

M. Augé-Laribé.

(Voir *France*).
(See *France*).

MAROC — MOROCCO

M. Augé-Laribé.

(Voir *France*).
(See *France*).

TUNISIE — TUNIS

M. Augé-Laribé.

(Voir *France*).
(See *France*).

GRANDE-BRETAGNE ET IRLANDE DU NORD

GREAT BRITAIN AND NORTHERN IRELAND

The Rt. Hon. The Earl of Feversham.

Parliamentary Secretary to the Ministry of Agriculture and Fisheries.

Mr. R. R. Enfield.

Assistant Secretary to the Ministry of Agriculture and Fisheries, Member of the Permanent Committee.

Mr. E. F. Nash.

Economist, Ministry of Agriculture and Fisheries.

Mr. C. Weatherill, C. B. E.

Deputy Secretary to the Department of Agriculture for Scotland.

Mr. J. M. Ramsay, O. B. E., M. A.

Principal of the Statistics Branch of the Department of Agriculture for Scotland.

Mr. D. A. E. Harkness, M. A.

Head of the Agricultural Economics Division of the Ministry of Agriculture for Northern Ireland.

GRÈCE — GREECE

S. Exc. M P. Metaxas.

Envoyé extraordinaire et Ministre plénipotentiaire près S. M. le Roi d'Italie – Délégué au Comité Permanent.

M. J. Romanos.

Conseiller de la Légation royale hellénique à Rome – Délégué suppléant au Comité Permanent.

HONGRIE — HUNGARY

M. Tibor de Pechy.

Secrétaire Général au Ministère de l'Agriculture.

S. Exc. M. R. de Marffy Mantuano.

Envoyé extraordinaire et Ministre plénipotentiaire en retraite – Délégué au Comité Permanent.

INDE — INDIA

Malik Sir Firoz Khan Noon, K. C. I. E.

High Commissioned for India – Member of the Permanent Committee

Mr. M. B. England.

Public Department, Office of the High Commissioner for India.

Mr. T. R. Low.

Public Department Office of the High Commissioner for India.

IRAN

M. Mohamed Hadjeb DAVALLOU.

Chargé d'Affaires à Rome.

M. Djemchid DAVALLOU.

M. Mohamed MIRKAHANI.

M. Madjid GANDHEVI.

M. Giulio UCCELLI.

Délégué au Comité Permanent.

IRLANDE — IRELAND

Mr. Daniel TWOMEY.

Secretary, Department of Agriculture.

Mr. Joseph RADCLIFFE.

Member of the Permanent Committee.

ITALIE — ITALY

S. Exc. le Prof. G. ACERBO, Baron dell'ATERNO.

Député, ancien Ministre, Président de l'Institut international d'Agriculture.

Le Dr. M. MUZZARINI.

Député, Président de la Confédération fasciste des agriculteurs.

Le Prof. F. Angelini.

Député, Président de la Confédération fasciste des travailleurs de l'agriculture.

Le Comte L. Gaetani dell'Aquila d'Aragona.

Député, Commissaire du Syndicat national fasciste des techniciens agricoles.

Le Prof. M. Mariani.

Directeur général de l'Agriculture au Ministère de l'Agriculture et des Forêts.

Le Dr. G. Nicotra.

Directeur Général au Ministère de l'Agriculture et des Forêts.

Le Dr. A. Anselmi.

Directeur général au Ministère des Corporations.

Le Dr. E, Caravale.

Directeur général au Ministère des Corporations.

Le Prof. F. Savorgnan.

Président de l'Institut central de statistique.

Le Prof. G. Tommasi.

Directeur de la Station royale expérimentale de chimie agricole.

Le Prof. L. Petri.

Directeur de la Station royale de pathologie végétale de Rome.

Le Prof. G. Fileni.

Inspecteur agricole régional.

Le Prof. G. Azzi.

de la Faculté d'Agriculture de l'Université de Pérouse.

Le Prof. B. Maymone.

Directeur de l'Institut d'expérimentation zootechnique de Rome.

Le Prof. M. Ferraguti.

Secrétaire du Comité Permanent du Blé.

Le Prof. A. Molinari.

Directeur de l'Institut central de Statistique.

LIBYE — LIBYA

S. Exc. le Prof. Tassinari.

Sous-Secrétaire d'Etat, Délégué au Comité Permanent.

S. Exc. le Sénateur Sandicchi.

Délégué au Comité Permanent.

Le Prof. Maugini.

Directeur de l'Institut colonial agricole italien. – Délégué au Comité Permanent.

S. Exc. M. De Rubeis.

Directeur général pour les Affaires de la Colonisation et du Travail au Ministère de l'Afrique italienne.

Le Dr. M. Moreno.

Directeur général des Affaires politiques au Ministère de l'Afrique italienne.

AFRIQUE ORIENTALE ITALIENNE
ITALIAN EAST AFRICA

S. Exc. le Prof. G. Tassinari.

S. Exc. le Sénateur P. Sandicchi.

Le Prof. A. Maugini.

S. Exc. M. A. De Rubeis.

Le Dr. M. M. Moreno.

(Voir *Libye*).
(See *Libya*).

ILES ITALIENNES DE L'ÉGÉE
ITALIAN AEGEAN ISLANDS

S. Exc. le Prof. G. Tassinari.

S. Exc. le Sénateur P. Sandicchi.

Le Prof. A. Maugini.

S. Exc. M. A. De Rubeis.

Le Dr. M. M. Moreno.

(Voir *Libye*).
(See *Libya*).

JAPON — JAPAN

M. H. MATSUMIYA.

Conseiller d'Ambassade - Délégué au Comité Permanent.

M. T. KUROKOTI.

Secrétaire au Ministère de l'Agriculture.

LETTONIE — LATVIA

S. Exc. M. A. SPEKKE.

Envoyé extraordinaire et Ministre plénipotentiaire près S. M. le Roi d'Italie - Délégué au Comité Permanent.

M. J. ZARINS.

Chef de la Direction de l'Agriculture au Ministère de l'Agriculture.

LITHUANIE — LITUANIA

S. Exc. M. Valdemaras CARNECKIS.

Envoyé extraordinaire et Ministre plénipotentiaire près S. M. le Roi d'Italie. - Délégué au Comité Permanent.

LUXEMBOURG — LUXEMBURG

M. H. van ORSHOVEN.

(Voir *Belgique*).

(See *Belgium*).

NORVÈGE — NORWAY

M. Anders FJELSTAD.

PAYS-BAS — NETHERLANDS

M. A. L. H. ROEBROEK.

Directeur Général de l'Agriculture.

Le Dr. J. J. L. VAN RIJN.

Conseiller agricole – Délégué au Comité Permanent – Vice-Président de l'Institut.

Le Dr. H. VAN HAASTERT.

Secrétaire du « Roomsch Katholieken Nederlandschen Boeren-en Tuindersbond ».

M. F. V. VALSTAR.

Regeeringscommissaris voor de groenten, – fruit – en sierteelt.

INDES NÉERLANDAISES — DUTCH INDIA

Le Dr. J. J. L. VAN RIJN.

(Voir *Pays-Bas*).

(See *Netherlands*).

POLOGNE — POLAND

Le Dr. W. Staniewicz.

Professeur à l'Université « Stefan Batory » de Wilno.

M. B. Mikulski.

Attaché honoraire à l'Ambassade de Pologne – Délégué au Comité Permanent.

M. E. de Szturm de Sztrem.

Directeur du Bureau central de Statistique.

ROUMANIE — RUMANIA

Le Prof. E. Porn.

Conseiller économique de la Légation à Rome – Délégué au Comité Permanent.

SUÈDE — SWEDEN

Le Prof. T. Björkman.

Secrétaire de l'Académie d'Agriculture suédoise – Délégué au Comité Permanent.

SUISSE — SWITZERLAND

S. Exc. M. P. Ruegger.

Envoyé extraordinaire et Ministre plénipotentiaire près S. M. le Roi d'Italie – Délégué au Comité Permanent.

Le Prof. E. Laur.

Directeur de l'Union Suisse des Paysans.

M. A. Borel.

Vice-Directeur de l'Union suisse des Paysans.

TCHÉCOSLOVAQUIE — CZECHOSLOVAKIA

S. Exc. le Dr. F. Chválkovský.

Envoyé extraordinaire et Ministre plénipotentiaire près S. M. le Roi d'Italie. – Délégué au Comité Permanent.

M. F. Heřman.

Conseiller de la Légation de Tchécoslovaquie à Rome.

URUGUAY

M. R. Christophersen.

YOUGOSLAVIE — YUGOSLAVIA

S. Exc. M. Bochko CHRISTITCH.

Envoyé extraordinaire et Ministre plénipotentiaire près S. M. le Roi d'Italie.

* * *

SOCIÉTÉ DES NATIONS

(*Observateur*)

M. E. M. BEAUMONT.

Membre de la Section des Relations économiques.

BUREAU INTERNATIONAL DU TRAVAIL

(*Observateur*)

M. F. VON BÜLOW.

Chef du Service agricole.

CONFÉDÉRATION INTERNATIONALE DE L'AGRICULTURE (C. I. A.) ET COMMISSION INTERNATIONALE PERMANENTE DES ASSOCIATIONS AGRICOLES (C. I. P. A.)

(*Observateur*)

Le Marquis DE VOGÜÉ.

Président de la Confédération internationale de l'Agriculture (C. I. A.) – Président de la Commission internationale permanente des Associations agricoles (C I. P. A.)

OFFICE INTERNATIONAL DU VIN

(*Observateur*)

M. J. SANGUINETTI.

Attaché Commercial à l'Ambassade de France à Rome.

IMPRIMERIE « DITTA CARLO COLOMBO »

ROME MCMXXXVIII

-64-

INTERNATIONAL INSTITUTE OF AGRICULTURE

XIVTH GENERAL ASSEMBLY

DAILY BULLETIN

No. 1

Tuesday 24 May 1938

SUMMARY

PRINTING OFFICE 'DITTA CARLO COLOMBO'

ROME 1938

I.

AGENDA FOR TUESDAY 24 MAY 1938

9.30 a. m.: Plenary meeting.

4. — The Instability of Farmers' Earnings and the Means of Stabilizing Them. (*Reporter:* M. M. AUGÉ-LARIBÉ, *Delegate of France and the French Possessions*).

5. — Rôle of the Radio and Cinema in the Technical Vocational and Social Training of Farmers, and in Supplying Information for Consumers (*Reporters:* M. F. BILBAO, *Delegate of Spain,* and Marquis PAULUCCI DI CALBOLI Barone, *Delegate of Tripolitania*).

5-*A*. — Supplement to the Report on the Rôle of the Cinema and the Radio in Technical Professional and Social Education of Farmers, and in giving Information to Consumers.

6. — Rôle of the International Institute of Agriculture in the Study of the Nutrition Problem (*Reporter:* Dr. J. J. L. VAN RIJN, *Delegate of the Netherlands and of the Netherlands Indies, Vice-President*).

7. — Enquiry into the means of carrying out a World Survey of Agricultural Resources (*Reporter:* M. J. CLYDE MARQUIS, *Delegate of the United States*).

8. — Influence of Industrial Inventions upon Agriculture and the Marketing of Agricultural Products (Raw Materials). (Item submitted and Report by the Royal Netherlands Government).

9. — Hygiene in Nutrition and Agriculture. (Item submitted and Report by the French Government).

10. — Publication by the International Institute of Agriculture of Information on the Measures taken in the various Countries for the Improvement of the Position of small Farmers. (Item submitted and Report by the Government of Finland).

11. — Intensification of the Activity of the International Institute of Agriculture regarding Studies on Agricultural Cooperation (Item submitted and Report by the Government of Finland).

12. — Unemployment in the Country and the resulting Decrease in Consumption by the rural Population. (Item submitted and Report by Polish Government).

(*The programme for the afternoon will be fixed at the plenary session of the morning*).

II.

REPORT OF THE MEETINGS OF MONDAY 23 MAY

(*a*) OPENING SESSION

(MORNING).

The Session was opened at 10 o' clock.

M. ACERBO, President of the Institute, welcomed the members of the various delegations and addressed the assembly.

M. ROSSONI, Italian Minister of Agriculture then made a speech which was warmly applauded.

M. WILSON, chief of the Delegation of the United States, and LORD FEVERSHAM, chief of the Delegation of the United Kingdom and Northern Ireland, expressed thanks in the name of the delegates present.

(*b*) FIRST PLENARY SESSION

(MORNING).

After an adjournment of 10 minutes, the Assembly held a plenary session and began its work.

On the proposal of LORD FEVERSHAM (*Great Britain*) the General Assembly then proceeded to the election of its President and Vice-Presidents.

M. LAUR (*Switzerland*) was unanimously elected President and Mr. G. M. A. HEYMANS (*South Africa*) and M. STANIEWICZ (*Poland*) Vice-Presidents.

The members of the Bureaus and Committees were also elected (see Chapter IV).

M. LAUR (*Switzerland*) took the chair.

He made of speech of thanks and then proposed the sending of the two following telegrams.

To His Majesty the King Emperor VICTOR EMMANUEL III
Tripoli.

« The XIVth General Assembly of the International Institute of Agriculture « at the moment of beginning its work renews, with profound devotion and « respect, the expression of the sincere gratitude and the very great admiration « which the International Institute of Agriculture feels for its August founder « and protector ».

LAUR
President of the General Assembly

ACERBO
President of the Permanent Committee

(*Approved unanimously*).

To H. E. Benito Mussolini
Head of the Government — Rome.

« The Delegations of the Governments of the Member States of the International Institute of Agriculture at the XIVth General Assembly present their « respects to your Excellency, maker of the new Italy and defender of the rural « civilization of peoples who to-day more than ever before draw their inspiration « from Rome ».

Laur
President of the General Assembly

Acerbo
President of the Permanent Committee

(*Approved unanimously*).

He then asked M. Brizi, Secretary General of the Institute, to make some statements and to convene the Coordinating Committee.

After a request by M. Massé (*France*) it was decided to convene this Committee immediately.

The President closed the plenary meeting at 12.

* * *

The Coordinating Committee met at 12 and concluded its work at 12.30.

SECOND PLENARY SESSION

(afternoon)

The session opened at 3.45 p.m. with M. Laur (*Switzerland*), President of the Assembly in the chair.

The President of the Assembly called upon M. Acerbo, President of the Institute to speak on the first item of the agenda: *General Report of the President of the Permanent Committee.*

M. Acerbo, President of the Institute, presented his report and made an additional statement on the question of diplomatic privileges.

After a comment by M. Massé (*France*), the report was approved in principle by the Assembly and sent to the Ist Commission for drafting and for the approval of a resolution.

The President of the Assembly then called upon M. Brizi, Secretary General, to speak on the second item on the agenda: *Report of the Secretary General on the Services and Administration of the Institute.*

M. Brizi presented his report.

The PRESIDENT called upon LORD FEVERSHAM (*Great Britain*), who explained the views of the British Delegation on the work of the Institute.

M. WEBER (*Germany*) and M. AUGÉ-LARIBÉ (*France*) then spoke. M. MASSÉ (*France*) after having expressed his agreement with the opinions put forward by LORD FEVERSHAM and M. WEBER in respect of the necessity of the limitation of the work to the Institute's possibilities, congratulated the Secretary General.

Sir FIROZ KHAN NOON (*India*) agreed with the opinions expressed by the different speakers. He welcomed the credits for the extension of the section concerning tropical and sub-tropical agriculture. He thanked the Secretary General and the staff for their work.

The discussion ended on the 2nd point of the agenda. The PRESIDENT proposed to send this report to the three Committees and to send to the competent committee the proposal of M. Weber (*Germany*) for the re-establishment of the publication of a German edition of the principal publications of the Institute.

The PRESIDENT called upon M. Koehler (*Germany*), Reporter of the Committee on the Financial Position to speak in respect of point 3 of the Agenda, *Report of the Permanent Committee on the Financial Position.*

M. KOEHLER (*Germany*) made his report. M. MASSÉ (*France*) took part in the discussion.

The PRESIDENT proposed the sending of the report to the Ist Committee. (*Approved*).

The Assembly will continue its work tomorrow at 9.30 a.m.

(*The Session closed at* 6.15 *p.m.*).

III.

PROPOSAL MADE BY THE DELEGATIONS

(1) PROPOSAL OF THE GERMAN DELEGATION.

The General Assembly invites the Permanent Committee to consider as soon as possible the resumption of publication of a German edition of the most important publications of the Institute, particularly economic publications.

(*For the Ist Commission:* General and administrative questions).

IV.

BUREAUS OF THE GENERAL ASSEMBLY AND COMMITTEES

(*A*) General Assembly.

President ..... M. E. Laur (*Switzerland*).

Vice-Presidents..... M. G. M. A. Heymans (*South Africa*).
M. Staniewicz (*Poland*).

(*B*) Committees.

First Committee (General and administrative questions).

President ..... M. A. Massé (*France*).

Vice-Presidents..... M. G. Comolli (*Argentina*).
M. A. Guerra Duval (*Brazil*).
M. Matsumiya (*Japan*).

Second Committee (Technical questions).

President ..... M. L. G. Michael (*United States*).

Vice-Presidents..... M. F. Weber (*Germany*).
M. T. R. Low (*India*).
M. De Rubeis (*Italy*).

Third Committee (Economic questions).

President ..... M. Tibor de Pechy (*Hungary*).

Vice-Presidents..... M. E. Hynninen (*Finland*).
M. D. Twomey (*Ireland*).
M. A. L. H. Roebroek (*Netherlands*).

V.

SECRETARIAT OF THE GENERAL ASSEMBLY

I. — *President's secretariat:*

M. Ruffolo, Chief of Section.

II. — *Liaison Bureau:*

M. Golay, Counsellor.
M. van de Weyer, Counsellor.
M. Abensour, Principal Redactor.
M. Pellegrini, Senior Employee.
M. Fioretti, Principal Employee.

III. — *Secretariat of the plenary sessions:*

M. Golay, Counsellor.
M. van de Weyer, Counsellor.
M. Abensour, Principal Redactor.
M. Chambart de Lauwe, Redactor.

IV. — *Secretariat of the first Committee (Administrative and general questions):*

M. van de Weyer, Counsellor.
M. de Viguerie, Principal Redactor.
M. Abensour, Principal Redactor.

V. — *Secretariat of the second Committee (Technical questions):*

M. Legros, Principal Redactor.
M. von Gescher, Redactor.
M. Kalé, Redactor.

VI. — *Secretariat of the third Committee (Economic questions):*

M. Grinenco, Counsellor.
M. Bruck, Counsellor.
M. Böker, Counsellor.
M. van Aartsen, Principal Redactor.
M. Freifeld, Redactor.
M. Tisson, Redactor.

Cerimonial: M. R. Pontecorvo, Steward-Cashier.

VI.

NOTICE

To day at 5.30 p. m. a film will be shown at the Institute (*Red room*).

* * *

Members of the General Assembly are asked to call at the Correspondence Boxes (First Floor) before and after each meeting so as to collect the documents, correspondence and invitations.

INTERNATIONAL INSTITUTE OF AGRICULTURE

XIVTH GENERAL ASSEMBLY

DAILY BULLETIN

No. 2

Wednesday 25 May 1938

SUMMARY

Members of the General Assembly are asked to call at the Correspondence Boxes (First Floor) before and after each meeting so as to collect the documents, correspondence and invitations.

PRINTING OFFICE 'DITTA CARLO COLOMBO' — ROME 1938

I.

AGENDA FOR WEDNESDAY 25 MAY 1938

9.30 a. m.

(Main Hall)

FIRST COMMITTEE

(General and administrative questions)

AGENDA

I. — *Report of the President:—*

General Statement by the President of the Permanent Committee (No. 1).
Supplementary note to the General Report presented in the name of the Permanent Committee (No. 1-a).

II. — *Financial questions:—*

Report of the Permanent Committee on the Financial Position (No. 3).
Supplement to the Report of the Permanent Committee on the Financial Position (No. 3-a).
Statement of receipts and expenditures for the year 1936 (No. 3-i).
Statement of receipts and expenditures for the year 1937 (No. 3-ii).
Budget for the year 1938 (No. 3-iii).
Report of the « Société Anonyme Fiduciaire Suisse », on the audit of Accounts for the financial Year 1936 (No. 3-iv).
Report of the « Société Anonyme Fiduciaire Suisse », on the audit of the Accounts for the financial Year 1937 (No. 3-v).

In addition:—

Report of the Secretary General on the Services and Administration of the Institute (No. 2) and supplement (No. 2-a).
Part II, Section II: *Budget* (pp. 20-26 of the Report).

III. — *Other general questions:—*

Report of the Secretary General on the Services and Administration of the Institute (No. 2) and supplement (No. 2-a):
Part II, Section III: *Staff of the Institute* (pp. 27-34); Section X: *Information on the activities of the consultative bodies* (p. 97); Section XII: *Work of the Bureaux in connection with international movements* (pp. 101-107); Section XIII: *Work of the Institute on the occasion of international conferences and meetings* (pp. 108-109).

3 p. m.

(Main Hall)

JOINT COMMITTEE

(Second and third Committees combined)

I. — Report on the Rôle of the Radio and Cinema in the Technical, Vocational and Social Training of Farmers, and in supplying information for consumers (Item 5).

II. — Report on the Rôle of the International Institute of Agriculture in the Study of the Nutrition Problem (Item 6).

III. — Report on the Hygiene of Nutrition and Agriculture (Item 9).

II.

REPORT OF THE MEETINGS OF TUESDAY 24 MAY

THIRD PLENARY SESSION

(morning)

The session was opened at 9.55 a. m. under the Presidency of M. G. M. A. Heymans (*South Africa*), Vice-President of the Assembly.

The President read the following telegram:

President General Assembly I. I. A.

« To you and to the President of the Permanent Committee my warmest thanks for kind message and most cordial wishes for the work of the General Assembly ».

Victor Emmanuel III.

The President then called upon M. Augé-Laribé (*France*), Reporter, to speak on the 4th item on the Agenda: *The Instability of Farmers' Earnings and the Means of reducing it.*

M. Augé-Laribé (*France*) made his report. The general discussion began with an address by Sir Firoz Khan Noon (*India*). At the request of M. R. R. Enfield (*Great Britain*), the Secretary General stated the proposals of the Co-ordinating Committee in respect of the division of the various items of the agenda between the various committees. After M. F. L. McDougall (*Australia*), M. J. C.

MARQUIS (*U. S. A.*), the SECRETARY GENERAL, and M. J. J. L. VAN RIJN (*Netherlands*), had spoken, these proposals were approved. It was further agreed that the Technical and Economic Committee should hold joint sessions on certain items on the agenda.

The discussion on the report of M. Augé-Laribé was continued by M. F. WEBER (*Germany*) and M. DE VOGÜÉ [*International Confederation of Agriculture* (C. I. A.), *Permanent International Committee of Agricultural Associations* (C. I. P. A.)].

The PRESIDENT then submitted to the Assembly the following proposals made by the Delegation of the United States in respect of procedure: " The American Delegation proposes, in regard to procedure, that the reporters shall make to the Plenary Session their reports and that these reports shall be sent immediately without debate to the various Committees ".

After M. MASSÉ (*France*), Sir FIROZ KHAN NOON (*India*), M. VAN RIJN (*Netherlands*), Lord FEVERSHAM (*Great Britain*), and M. SANDICCHI (*Italy*), had spoken, this proposal was put to the vote and carried.

The General Assembly further decided on the proposal of M. MASSÉ (*France*), supported by Lord FEVERSHAM (*Great Britain*) and M. SANDICCHI (*Italy*), that for the next General Assembly the procedure for the work of the Assembly should be established by the Assembly before the session and that this procedure should be maintained throughout the session.

The PRESIDENT then read a resolution proposed by M. Massé (*France*) in the name of the French Delegation, in respect of diplomatic immunities for the members of the Permanent Committee and of the staff of the Institute, in connection with the General Report of the President of the Institute (*see* Section III).

(*This resolution was unanimously approved and sent to the Coordinating Committee*).

The PRESIDENT proposed to postpone until the next day, that is until after the showing of the agricultural films, the report appearing as Item 5 in the Agenda: *Rôle of the Radio and Cinema in the Technical, Vocational and Social Training of Farmers, and in Supplying Information for Consumers.*

The PRESIDENT then proposed to pass to Items 6 and 9 of the Agenda which dealt with related questions.

The PRESIDENT called upon M. VAN RIJN (*Netherlands*) to speak on Item 6 of the Agenda: *Rôle of the International Institute of Agriculture in the Study of the Nutrition Problem.*

M. VAN RIJN (*Netherlands*) made his report.

M. MASSÉ (*France*) then presented the report of the French Government on Item 9 of the Agenda: *Hygiene in Nutrition and Agriculture.*

At this point M. MASSÉ (*France*) submitted the following resolution to replace that at the end of Report No. 9.

In concluding the work of this session the Assembly decided (1) to send to the Third Committee (*Economic Questions*) Report No. 4 (*Instability of Farmers' Earnings*), and to a joint session of the Second (*Technical Questions*) and Third (*Economic Questions*) Committee Reports Nos. 6 and 9 (*Nutrition*).

The session closed at 1.10 p. m.

IVTH PLENARY SESSION

(AFTERNOON).

The meeting began at 3.45 p.m. with M. G. M. A. HEYMANS (*South Africa*) in the chair.

The PRESIDENT called for the reading of a proposal made by M. MASSÉ (*France*) relating to the report of M. QUEUILLE on hygiene of nutrition (Item 9 of the agenda). After comments by MM. F. L. MCDOUGALL (*Australia*), J. J. L. VAN RIJN (*Netherlands*) and A. MASSÉ (*France*), the proposal was approved in the form given in Section III.

The PRESIDENT then called upon Mr. J. C. MARQUIS (*U. S. A.*) to present his report on Item 7 of the agenda: *A survey of the Agricultural Resources of the World.*

Mr. J. C. MARQUIS (*U. S. A.*) presented his report.

The PRESIDENT proposed that the Assembly should proceed with item 12 of the agenda: *Unemployment in the country and the resulting decrease in consumption by the rural population.*

M. W. STANIEWICZ (*Poland*) presented his report.

The PRESIDENT then called upon M. H. VAN HAASTERT (*Netherlands*) to present the report of the Royal Netherlands Government on Item 8 of the agenda: *The influence of Industrial Inventions upon Agriculture and the Marketing of Agricultural Products.*

M. H. VAN HAASTERT (*Netherlands*) presented the report.

The PRESIDENT then called upon M. E. HYNNINEN (*Finland*) on Item 10 of the agenda: *Publication by the International Institute of Agriculture of information on the measures taken in the various countries for the improvement of the position of small farmers.*

M. E. HYNNINEN (*Finland*) presented the report of the Government of Finland on this question.

The PRESIDENT called upon M. J. H. KONTTINEN (*Finland*) who presented the report of the Government of Finland on Item 11 of the agenda: *Intensification of the activity of the International Institute of Agriculture regarding studies on Agricultural Cooperation.*

The PRESIDENT called upon M. F. BILBAO (*Spain*), who presented the report drawn up in collaboration with M. PAULUCCI DI CALBOLI (*Italy*) on Item 5 of the agenda: *The Rôle of the Radio and Cinema in the Technical Vocational and Social Training of Farmers, and in supplying information for consumers.*

In conclusion the PRESIDENT proposed that the report on Item 5 of the agenda should be referred to the Joint Committee (Second and Third Committees combined), reports on Items 7 and 8 to the Second Committee and the reports on Items 10, 11 and 12 to the Third Committee. The proposal was carried.

The PRESIDENT proposed that the First Committee (General and Administrative Questions) should meet on Wednesday 25th of May at 9.30 a.m., and the Joint Committee (Second and Third Committee combined) on the same day at 3. p. m. Carried.

The PRESIDENT thanked the speakers and closed the meeting at 5.20 p.m.

III.

RESOLUTIONS CARRIED AND REFERRED TO THE COORDINATING COMMITTEE

I. — *Diplomatic immunities.*

" The XIV General Assembly of the International Institute of Agriculture, in acknowledgement of the steps taken in the name of the Permanent Committee by H. E. M. Acerbo to obtain whatever improvements are possible in the application of the Italian law on diplomatic privileges and prerogatives

for the Permanent Committee and all the staff of the Institute, expresses to him their thanks and recognition of the steps taken to solve this delicate question.

The General Assembly is pleased to hope that this question will be resolved as soon and as satisfactorily as possible, after taking into account the treatment accorded by other international institutions".

(*Resolution carried at the plenary session on Tuesday 24 May (Morning) on the proposal of the French Delegation*).

II. — *Hygiene of Nutrition and Agriculture.*

The General Assembly of the International Institute of Agriculture holds that it is desirable that the collaboration already in existence between the International Institute of Agriculture and the relative Sections of the League of Nations for the elaboration of a rational policy of nutrition should be maintained as closely as possible.

(*Resolution carried at the plenary session on Tuesday 24 May (afternoon) on the proposal of the French Delegation*).

IV.

INFORMATION

Secretariat of the Third Committee. (Economic Questions).

In addition to other members of the Secretariat (p. 7 of the Daily Bulletin, No. 1), add:

M. J. Deslarzes, Redactor.

* * *

To day at 5.30 p. m. a film will be shown at the Institute (*Red room*).

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INTERNATIONAL INSTITUTE OF AGRICULTURE

XIVTH GENERAL ASSEMBLY

DAILY BULLETIN

No. 3

Thursday 26 May 1938

SUMMARY

Members of the General Assembly are asked to call at the Correspondence Boxes (First Floor) before and after each meeting so as to collect the documents, correspondence and invitations.

PRINTING OFFICE 'DITTA CARLO COLOMBO' — ROME 1938

I.

AGENDA FOR THURSDAY 26 MAY 1938

Morning

9.30 a. m.

(VERANDAH II)

DRAFTING COMMITTEE OF THE SECOND AND THIRD COMMITTEES

(NUTRITION)

This Committee consists of MM. ASTIER (*France*), KELLOGG (*United States*), McDOUGALL (*Australia*), MAYMONE (*Italy*), FALLON (*Belgian Congo*), VAN RIJN (*Netherlands*) and BERNARD (*France*).

10.30 a. m.

(MAIN HALL)

JOINT MEETING OF THE SECOND AND THIRD COMMITTEES

AGENDA

(1) Continuation and conclusion of the discussion on Reports 6 and 9 (Nutrition).
(2) Discussion of any resolutions submitted on radio in agriculture.

* * *

Afternoon

3 p. m.

(RED ROOM)

SECOND COMMITTEE

(TECHNICAL QUESTIONS)

AGENDA

Report No. 7: A survey of the agricultural resources of the world.

In addition:

Reports No. 2 and No. 2-A: Report (and Supplement) of the Secretary General on the Services and Administration of the Institute: Part II, Sections VII (pp. 66-76) and XI (pp. 98-100).

* * *

3 p. m.

(Main Hall)

THIRD COMMITTEE

(Economic Questions).

AGENDA.

The Committee will examine the following reports in the order given:

Report No. 4: The Instability of Farmers Earnings and the means of stabilizing them.

Report No. 8: Influence of Industrial Inventions upon Agriculture and the Marketing of Agricultural Products (Raw Materials).

Report No. 10: Publication by the International Institute of Agriculture of information on the measures taken in the various countries for the improvement of the position of small farmers.

Report No. 11: Intensification of the activity of the International Institute of Agriculture regarding studies on Agricultural Cooperation.

Report No. 12: Unemployment in the country and the resulting decrease in consumption by the rural population.

In addition:

Report No. 2 and Supplement No. 2/*A* of the Secretary General on the Services and Administration of the Institute: Part II, Sections VI (pp. 55-65), VIII (pp. 77-86) and XI (pp. 98-100).

II.

REPORT OF THE MEETINGS OF WEDNESDAY 25 MAY 1938

(Morning)

FIRST COMMITTEE

(General and Administrative Questions).

The Session opened at 9.50 with M. Massé (*France*), President of the Committee, in the chair.

The President proposed M. D. A. E. Harkness (*Great Britain*) as Reporter The proposal was unanimously approved.

The President put to discussion the General Report of the President and the Supplementary Note which were approved without discussion, account taken of the resolution presented by the Head of the French Delegation on the question of diplomatic immunities, already approved by the General Assembly.

The Committee then passed to the examination of financial questions in respect both of the Report of the Permanent Committee on the Financial Position (No. 3 and 3-A) and of the annexed documents, and of Section II (Part II) of the Report of the Secretary General on the Services (No. 2 and 2-A). (*Budget*).

After a Report by Dr. F. KOEHLER (*Germany*), Reporter, in the name of the Permanent Committee, certain supplementary explanations by the Secretary General, and a discussion in which took part M. P. SANDICCHI (*Italian Colonies*), M. M. TAHER AL OMARI (*Egypt*) as well as the Reporter of the Permanent Committee and the President of the Committee, the Committee approved without modification the resolution on the Financial Report. (*See* Section III). The Committee also took note of the annexed documents submitted (3-I, 3-II, 3-III, 3-IV and 3-V).

The PRESIDENT then submitted a proposed resolution on the financial administration (*See* Section III) which was unanimously approved. Then the Committee considered the following items of the Agenda: *Report of the Secretary General on the Services and Administration of the Institute* (No. 2) and Supplement (No. 2-A); Part II, Section III: *Staff of the Institute* (pp. 27-34); Section X: *Information on the activities of the consultative bodies* (p. 97); Section XII: *Work of the Bureaus in connection with international movements* (pp. 101-107); Section XIII: *Work of the Institute on the occasion of international conferences and meetings* (pp. 108-109).

The British Delegation proposed a resolution on the Services and on the use of the funds of the Institute. After M. M. TAHER AL OMARI (*Egypt*) had spoken, and explanations had been given by Mr. R. R. ENFIELD (*Great Britain* and *Canada*), this Resolution was unanimously approved. (*See* Section III).

The PRESIDENT then proposed a resolution thanking the Permanent Committee and the Staff of the Institute. After M. J. J. L. VAN RIJN (*Netherlands*) had spoken, the Resolution was unanimously approved (*See* Chapter III).

A proposed resolution was then submitted by the President concerning the ratification of the diplomatic conventions made under the auspices of the Institute. The PRESIDENT, M. J. J. L. VAN RIJN (*Netherlands*), M. P. SANDICCHI (*Italian Colonies*), and the Secretary General of the Institute, spoke. The resolution was unanimously approved with an amendment proposed by M. P. SANDICCHI (*Italian Colonies*) (*See* Section III).

Dr. F. KOEHLER (*Germany*) made some comments on the draft resolution submitted by the German Delegation in the Plenary Session on the issue of a German edition of the principal publications of the Institute and referred to the First Committee. This resolution was unanimously approved (*See* Section III).

M. J. J. L. VAN RIJN (*Netherlands*) thanked the President who in his turn thanked all the members of the Committee.

The session closed at 11.45 a. m.

* * *

(AFTERNOON).

SESSION OF THE JOINT COMMITTEE

(SECOND AND THIRD COMMITTEES COMBINED).

The Session began at 3.40 p. m. with Mr. L. G. MICHAEL (*United States*), President of the Second Committee, in the chair.

The PRESIDENT proposed that M. J. Bernard (*France*) should be designated reporter of the Joint Committee. The proposal was approved.

The PRESIDENT opened the discussion on the *Rôle of the radio and cinema in the technical, vocational and social training of farmers and in supplying information for consumers* (*Report No. 5*).

The following took part in this discussion: MM. F. WEBER (*Germany*), AUGÉ-LARIBÉ (*France*), Sir FIROZ KHAN NOON (*India*), TAHER AL OMARI (*Egypt*), A. MASSÉ (*France*). It concluded with a resolution proposed by M. F. WEBER (*Germany*), which, after an amendment by M. A. MASSÉ (*France*), was approved unanimously (*See* Section III).

Following an observation by M. BILBAO (*Spain*), M. AUGÉ-LARIBÉ (*France*), pointed out that, though the subject of rural broadcasting had not given rise to any discussion, the General Assembly was not unmindful of this question and entrusted further study of it to the Permanent Committee.

The PRESIDENT then opened the discussions on the *Rôle of the International Institute of Agriculture in the study of the problem of nutrition and of the hygiene of nutrition* (*Reports Nos. 6 and 9*).

M. MAYMONE (*Italy*), after a statement on the importance of the subject, presented a resolution on behalf of the Italian Delegation (*See* Section IV). M. J. L. MCDOUGALL (*Australia*) expressed his views and presented a resolution (*See* Section IV). In the discussion of this resolution the following took part: MM. C. E. KELLOGG (*United States*), ASTIER (*France*) and Baron F. FALLON (*Belgian Congo*). M. F. L. MCDOUGALL (*Australia*) moved that a Drafting Committee should be formed. M. J. J. L. VAN RIJN (*Netherlands*) supported the proposal. After a discussion on the possibility of presenting a single resolution, to which MM. R. R. ENFIELD (*Great Britain*), ASTIER (*France*), Sir FIROZ KHAN NOON (*India*), A. MASSÉ (*France*), MCDOUGALL (*Australia*), J. J. L. VAN RIJN (*Netherlands*) and B. MAYMONE (*Italy*) contributed, a Drafting Committee composed of the following Delegates was formed: MM. ASTIER (*France*), C. E. KELLOGG (*United States*), F. L. MCDOUGALL (*Australia*), B. MAYMONE (*Italy*), Baron F. FALLON (*Belgian Congo*), J. J. L. VAN RIJN (*Netherlands*) and J. BERNARD (*France*).

The PRESIDENT fixed the meeting of this Drafting Committee for Thursday, 26 May at 9.30 a. m. and that of the Joint Committee (Second and Third Committees) for the same day at 10.30 a. m.

M. DE VUYST (*Belgium*) submitted a resolution on rural broadcasting to the Bureau of the Committee at the close of the Session (*See* Section IV).

The session was closed at 6.15 p. m.

III.

RESOLUTIONS APPROVED AND REFERRED TO THE CO-ORDINATING COMMITTEE

III. — *Budgetary Questions.*

The General Assembly:

(1) Approves the Accounts of Receipts and Expenditure for the financial years 1936 and 1937.

(2) Takes note of the budget for 1938, as approved by the Permanent Committee.

(3) Votes, to meet the expenditure of 1939, a maximum sum of lire 6,950,000, it being understood that: (*a*) if the receipts to be realized in the course of that year are unlikely to reach this sum of Lit. 6,950,000, steps will be taken to reduce expenditure to the level of receipts expected to materialize in the course of that year, and (*b*) if the receipts to be realized in 1939 are likely to exceed materially the sum of Lit. 6,950,000, an amount not exceeding one-half of such excess may be applied to increase the sum allowed for expenditure in 1939.

(4) Votes also to meet the expenditure in 1940 a maximum of Lit. 6,950,000 subject to the same conditions as in 3 above.

(*Resolution approved by the First Committee* (*Wednesday 25 May, morning*) *as conclusion of the Report of the Permanent Committee on the Financial Position*).

IV. — *Financial Administration.*

Taking note of the Report of "Société Anonyme Fiduciaire Suisse" on the accounts for the years 1936 and 1937, the General Assembly thanked and congratulated the Permanent Committee and the Administrative Services on the careful and wise manner in which the resources of the Institute have been handled in a particularly difficult period. It expressed the wish that the same attitude would be adopted in the future.

(*Resolution approved by the First Committee* (*Wednesday 25 May, morning*) *on the proposal of the French Delegation*).

V. — *Direction of the Work of the Institute.*

The General Assembly, having considered the Reports of the General Secretary and the Finance Report, is of the opinion that in arranging the future work of the Institute, the Permanent Committee should give first consideration to the maintenance and improvement of the regular services, particularly in the statistical and economic fields, and that these services should be regarded as constituting a first charge on the funds of the Institute.

(*Resolution approved by the First Committee* (*Wednesday 25 May, morning*) *on the proposal of the British Delegation*).

VI. — *Thanks to the Permanent Committee and to the Staff.*

The General Assembly, after having expressed its thanks to the Permanent Committee, thanked also the Staff of the Institute for the devotion and energy with which it carried out its work.

(*Resolution approved by the First Committee* (*Wednesday 25 May, morning*) *on the proposal of the French Delegation*).

VII. — *Ratification of Diplomatic Conventions.*

The General Assembly expressed the wish that, in order that the diplomatic conventions concluded under the auspices of the Institute might come into force, they should be ratified by those States which have not already done so.

(*Resolution approved by the First Committee* (*Wednesday 25 May, morning*) *on the proposal of the French Delegation*).

VIII. — *German Edition of Publications.*

The General Assembly asked the Permanent Committee to consider as soon as possible the re-establishment of a German edition of the most important publications of the Institute, particularly those in the field of economics.

(*Resolution approved by the First Committee* (*Wednesday 25 May, morning*) *on the proposal of the German Delegation*).

IX. — *The Cinema in Agriculture.*

The General Assembly recommends the Permanent Committee to study in detail the practical means of developing the exchange of films of agricultural interest between different countries and, in particular, to publish periodically a list of the films reported to them by the Member Governments, taking as their guide the ideas expressed during the discussion.

(*Resolution approved at the joint meeting of the Second and Third Committees* (*Wednesday 25 May, afternoon*) *on the proposal of the German Delegation, amended by the French Delegation*).

IV.

DRAFT RESOLUTIONS

(A) DRAFT RESOLUTIONS REFERRED TO THE DRAFTING COMMITTEE OF THE SECOND AND THIRD COMMITTEES.

(1) Draft resolution of the Italian Delegation.

The Italian Delegation, in associating itself with the conclusions of the Report presented by Dr. J. J. L. van Rijn, makes the following recommendation.

The General Assembly, in view of the importance of the rational feeding of livestock in the reduction of the cost of production and in the improvement of the quality of foodstuffs of animal origin, milk, meat and eggs, invites the Permanent Committee to direct its work on nutrition not only towards questions relating to the production of foodstuffs for human consumption but also to the problem of the rational feeding of livestock with the following objects:—

(1) To provide that herds should be healthy in order to increase their productivity and to assure the production of animal foodstuffs of good quality, bearing in mind also the protective value of these foodstuffs.

(2) To call a meeting of technical experts for the purpose of standardizing the methods followed, to ascertain the nutrition requirements of various kinds of livestock with a view to reducing the prices of foodstuffs of animal origin.

(3) To encourage studies as to the most suitable age for slaughter of the various kinds of livestock in the interest of the breeder and from the point of view of the quality of meat.

(4) To make available new knowledge of the content and the protective substances of feedingstuffs.

(5) To make known recommendable methods of intensifying the production of fodders.

(6) To make available knowledge of modern methods of harvesting, conserving and preparing fodders, giving particular attention to the influence of these methods on the protective value of these feedingstuffs.

(7) To publish information as to the best utilization of the secondary products of farming and of agricultural industries in the feeding of livestock.

(8) To study the use of part of the production of certain agricultural commodities, such as cereals, which might become available as a result of a change in human nutrition habits.

(2) Draft resolution of the Australian Delegation.

The General Assembly having studied the reports of: (I) Dr. van Rijn on behalf of the Permanent Committee "The Rôle of the International Institute of Agriculture in the study of the Nutrition Problem"; (II) of M. Queuille on behalf of the French Government on "Hygiene in Nutrition and Agriculture" and (III) of Dr. Staniewicz, on behalf of the Polish Government on "Unemployment and Under-nutrition of the Rural Population":

(I) considers: that, having regard to the evidence of malnutrition in all countries and to the serious undernutrition among both the rural and urban populations in many countries, the adoption by Governments of nutritional policies is a matter of importance to agricultural producers;

(II) endorses the recommendation of the Assembly of the League of Nations that Governments should establish national nutrition committees and urges upon Governments ~~that, in accordance with the recommendations of the League Assembly, the interests of~~ agriculture should be effectively represented on such committees;

(III) welcomes the action taken by the Permanent Committee in contributing in any important fashion to the international study of nutritional problems and decides that the International Institute of Agriculture should continue ~~to~~ the study of these problems, especially in relation to the consumption and production of foodstuffs and prices;

(IV) decides to cooperate with the League of Nations and the International Labour Office in the presentation of information to Governments designed to assist in the ~~formulation~~ of active nutritional policies;

(V) directs particular attention to the problems of undernutrition among the rural population especially in the countries of Eastern and Southeastern Europe and in Asia with the aim of indicating ways in which these conditions can be ameliorated.

B. — DRAFT RESOLUTION SUBMITTED TO THE BUREAU FOLLOWING THE DISCUSSION AT THE JOINT MEETING OF THE SECOND AND THIRD COMMITTEES

Resolution of the Belgian Delegation.

It is important that the rural radio, like the cinema, should have not only a technical but also a social and household aim. They should assist in rural education for the purpose of ameliorating life in the country and for the progress of civilization.

V.

NOTICE

Line 20 on page 4 of the *Daily Bulletin* No. 2 should read "at the beginning of the session" instead of "before the session".

INTERNATIONAL INSTITUTE OF AGRICULTURE

XIVTH GENERAL ASSEMBLY

DAILY BULLETIN

No. 4

Friday 27 May 1938

SUMMARY

Members of the General Assembly are asked to call at the Correspondence Boxes (First Floor) before and after each meeting so as to collect the documents, correspondence and invitations.

PRINTING OFFICE 'DITTA CARLO COLOMBO' — ROME 1938

I.

AGENDA FOR FRIDAY 27 MAY 1938

Morning

9.30 a. m.

(MAIN HALL)

JOINT MEETING OF THE SECOND AND THIRD COMMITTEES

(TECHNICAL AND ECONOMIC QUESTIONS).

(1) Draft resolution of the American Delegation concerning monographs on the principal agricultural products of world trade (*See* Section IV).

(2) Draft resolution of the American Delegation concerning a study of world agricultural resources (*See* Section IV).

2-*a*) Amendment submitted by M. AZZI (*Italy*) to the above proposed resolution (*See* Section IV).

(3) Draft resolution concerning statistics of hard wheat submitted by the French Delegation (*See* Section IV).

(4) *Report No.* 4: The Instability of Farmers' Earnings and the means of reducing it.

4-*a*) Draft resolution submitted by M. A. MASSÉ (*France*) on report No. 4 (*See* Section IV).

(5) *Report No.* 8: Influence of Industrial Inventions upon Agriculture and the Marketing of Agricultural Products.

(5-*a*) Draft resolution submitted by the American Delegation on report No. 8 (*See* Section IV).

(6) *Report No.* 10: Publication by the International Institute of Agriculture of information on the measures taken in the various countries for the improvement of the position of small farmers.

(6-*a*) Draft resolution submitted by the Belgian Delegation on report No. 10 (*See* Section IV).

(7) *Report No.* 11: Intensification of the activity of the International Institute of Agriculture regarding studies in Agricultural Cooperation.

(8) *Report No.* 12: Unemployment in the country and the resulting decrease in consumption by the rural population.

Afternoon

3 p. m.

The Agenda for the afternoon will be decided on at the end of the sitting.

II.

REPORT OF THE MEETINGS OF THURSDAY 26 MAY 1938

(MORNING)

JOINT COMMITTEE

(SECOND AND THIRD COMMITTEES COMBINED).

The Session opened at 11.10 with Mr. MICHAEL (*United States*), President of the Second Committee, in the chair.

The translation of the resolutions prepared by the Drafting Committee being not yet ready, the PRESIDENT proposed to open the Session with a discussion of the Rôle of the Radio in Agriculture. There followed a discussion in which MM. DE VUYST (*Belgium*) and AUGÉ-LARIBÉ (*France*) and Mr. MARQUIS (*United States*) took part. M. AUGÉ-LARIBÉ (*France*) proposed a resolution substituting that of M. DE VUYST (*Belgium*) and this was carried unanimously (*See* Section III).

The Session was suspended at 11.40 a.m. and resumed at noon.

The PRESIDENT then proposed the study of the points in the Report of the Secretary-General which interested the Second and Third Committees. The points which particularly interested the Second Committee, namely, the activities of the Legislation and Sylviculture Sections, did not lead to any discussion.

A discussion then took place on the questions in which the Third Committee was interested, particularly the work of the Statistical Bureau and the World Agricultural Census. During the debate Mr. ENFIELD (*Great Britain*) and M. AUGÉ-LARIBÉ (*France*) took part in order to offer certain suggestions for future work in connection with the next World Agricultural Census and on agricultural statistics.

M. AUGÉ-LARIBÉ (*France*) submitted a draft resolution on the statistics of hard wheat (*See* Section IV), and the Secretary-General assured the Mixed Committee that the Administration of the Institute would take good note of the suggestions put forward by Mr. ENFIELD (*Great Britain*) in regard to the World Agricultural Census and that these suggestions might lead to a concrete proposal at the next General Assembly.

The draft resolution on Nutrition prepared by the Drafting Committee was then discussed. Mr. MCDOUGALL (*Australia*), M. ASTIER (*France*), Sir FIROZ KHAN NOON (*India*), M. MASSÉ (*France*) and Dr. VAN RIJN (*Netherlands*) took part in

the discussion, proposing various amendments to the text prepared by the Committee and agreed to add to Part I of the resolution some changes in detail and to Part II the preamble to the resolution presented by the Italian Delegation during the first session of the Mixed Committee.

The resolution was carried unanimously in its entirety and sent to the Co-ordinating Committee (*See* Section III).

The PRESIDENT proposed that instead of holding separate meetings of the Second and Third Committees there should be a meeting of the Joint Committee at 3 p. m. for the discussion of all the questions included in the Agenda of the two Committees. This proposal was carried.

The Session closed at 1.10 p. m.

* * *

(AFTERNOON)

JOINT COMMITTEE

(SECOND AND THIRD COMMITTEES COMBINED).

The Session began at 3.25 p.m. with Mr. MICHAEL (*United States*), President of the Second Committee, in the chair.

The PRESIDENT proposed that M. BOREL (*Switzerland*) should be appointed Second Reporter of the Joint Committee. The proposal was approved.

Dr. BLACK (*United States*) spoke on the statistics of hard wheat and requested some explanation and this was supplied by M. AUGÉ-LARIBÉ (*France*).

Mr. WHEELER (*United States*) presented in the name of his delegation a draft resolution requesting the Permanent Committee to continue the publication of general monographs. This draft resolution was supported by Mr. LOW (*India*) (*See* Section IV).

The Committee, on the proposal of the PRESIDENT, dealt with the following items of the Agenda: *Report of the Secretary-General on the Services and Administration* (No. 2) and supplement (No. 2-*A*); Part II, Section VII: *Bureau of Agricultural Science* (pp. 66-76); Section VIII: *Bureau of Economic and Social Studies* (pp. 77-86); Section IX: *Library* (pp. 87-96); Section XI: *Work of the Services arising out of the Agreement with the League of Nations* (pp. 98-100).

The PRESIDENT then opened the discussion on a Survey of the Agricultural Resources of the World (Report No. 7). A general draft resolution on this subject was submitted by the Delegation of the United States (*See* Section IV) and an amendment by M. AZZI (*Italy*) (*See* Section IV). A long discussion followed in which M. AZZI (*Italy*), Mr. MARQUIS (*United States*), Dr. KELLOGG (*United States*) and Prof. LAUR (*Switzerland*) took part. The PRESIDENT, on the proposal of Dr. VAN RIJN (*Netherlands*), seconded by Sir FIROZ KHAN NOON (*India*) closed the discussion.

On the proposal of the SECRETARY-GENERAL, the discussions were postponed to the next Session of the Joint Committee, Friday, 27 May, at 9.30 a. m.

The Session was closed at 5.10 p. m.

III.

RESOLUTIONS APPROVED AND REFERRED TO THE CO-ORDINATING COMMITTEE

X. — *Nutrition.*

(*A*) The General Assembly, having studied the Reports of (1) Dr. VAN RIJN on " The Rôle of the International Institute of Agriculture in the Study of the Nutrition Problem ", (2) M. QUEUILLE on behalf of the French Government on " Hygiene in Nutrition and Agriculture " and (3) Dr. STANIEWICZ on behalf of the Polish Government on " Unemployment and Undernutrition of the Rural Population:

(1) Considers that, having regard to the evidence of malnutrition in all countries and to the serious undernutrition among both the rural and urban populations in many countries, the adoption by Governments of nutritional policies is a matter of importance to agricultural producers;

(2) recommend in agreement with the Assembly of the League of Nations that Governments should establish national nutrition committees and urges upon Governments that agriculture should be effectively represented on such committees;

(3) welcomes the action taken by the Permanent Committee in contributing in any important fashion to the international study of nutrition problems and decides that the International Institute of Agriculture should continue and intensify the study of these problems, especially in relation to agricultural production;

(4) decides to co-operate closely with other official international bodies and to supply Governments with information designed to assist in the development of active nutrition policies;

(5) draws the attention of Governments to the problem of undernutrition among the rural population of certain countries with the object of indicating ways in which this state of affairs can be ameliorated;

(6) directs the attention of Governments to the malnutrition of the rural population which may result, among other reasons, from foodstuffs grown on unsuitable soils, from poor husbandry, etc.

(*B*) As regards livestock feeding, the General Assembly, bearing in mind the proposal of the Italian Delegation, recognizes that a great volume of scientific work is being conducted in many countries and asks the Permanent Committee to consider the desirability of action to co-ordinate this work and to interpret its most important findings in practical terms which can be applied by farmers.

(*Carried at the joint session of the second and third Committees* (*26 May, morning session*) *on the proposal of the Drafting Committee concerned with the study of the Australian and Italian proposals.* (See *Chapter IV*).

Further, the above Committee decided to send to the Co-ordinating Committee also the preamble to the original Italian proposal to adapt it to point B (*livestock feeding*) *of the aforesaid resolution:*

The General Assembly, in view of the importance of the rational feeding of livestock in the reduction of the cost of production and in the improvement of the quality of foodstuffs of animal-origin, milk, meat and eggs, invites the Permanent Committee to direct its work on nutrition not only towards questions relating to the production of foodstuffs for human consumption but also to the problem of the rational feeding of livestock.

XI. — *Broadcasting.*

The General Assembly approves the report of MM. Bilbao and Paulucci di Calboli regarding rural broadcasting and brings to the special attention of the Permanent Committee the conclusions of this report emphasizing that the aims should be at the same time technical, vocational, educational, social and domestic.

(*Carried at the joint session of the second and third Committee* (*26 May, morning session*) *on the proposal of the French Delegation.*

IV.

DRAFT RESOLUTIONS SUBMITTED AND REFERRED TO THE JOINT SESSION OF THE SECOND AND THIRD COMMITTEES

(a) *Draft resolution submitted by the American Delegation in respect of monographs on the principal agricultural commodities on the world markets.*

" The General Assembly,

Having noted with satisfaction the publication of two new monographs, in the series of studies of the principal agricultural products on the world markets, on Production of and Trade in Fats and Oils and on World Production of Meat,

Recommends that the Permanent Committee continue to give attention to studies in this series to cover other of the principal commodities ".

* * *

(b) *Draft resolution proposed by the American Delegation on report No. 7: A Survey of the Agricultural Resources of the World.*

" The General Assembly,

Having taken note of the Report submitted in the name of the United States Delegation by Mr. Marquis on the subject of a Survey of World Agricultural Resources, recognizes the need for further collaboration between the several international agricultural organizations in the preparation of information bearing upon international subjects and also recognizes the importance and values of comparability in the information published.

And

Calls the attention of the Permanent Committee to the proposal and suggests that, after consultation with representatives of the several organizations, it should consider the possibility of taking the necessary steps to organize and complete such a survey in collaboration with these organizations within the limits of the available resources of the Institute ".

* * *

(c) *Amendment submitted by M.* Azzi (Italy) *to the preceding Draft Resolution.*

" The General Assembly considers it useful to emphasize the necessity of adding to the soil and meteorological maps a map for each crop, synthesizing the relations between soil and climate in respect to output ".

* * *

(d) *Draft resolution submitted by the French delegation in respect of statistics of hard wheat.*

" The General Assembly asks the Secretariat General to approach the countries producing hard wheat with a view to their adopting a common method in the preparation of statistics on the production of these varieties, based on their botanical characters ".

* * *

(e) *Draft resolution submitted by M.* AUGÉ-LARIBÉ *on report No. 4.*

" The General Assembly, having examined the report presented on behalf of the Permanent Committee on the instability of farmers' earnings and on the means of stabilizing them, invites the Permanent Committee to examine the possibility of realizing the proposals made by the Reporter and, in particular, the following points:

(1) To improve information on crop prospects so that they may be known at critical stages of growth;

(2) To attempt to estimate the magnitude and the causes of variations in the annual crops above or below the normal. "

(3) To attempt to estimate methodically the gross annual income of agriculture in some countries, if possible from all crops or at least from the more important, with a view to compiling general indices of agricultural activity;

(4) To continue to study Governmental measures affecting the prices of agricultural products, paying attention to the motives underlying such measures;

(5) To study the relation between the production and marketing of agricultural products which compete with, or act as substitutes for each other, in order to try to forecast the changes which such competition or substitution may have on the existing agricultural situation;

(6) To continue to follow with the closest attention all technical improvements and methods of occupational organization, of co-operation, of credit, of encouragement and of protection of farmers which might bring more stability to the wages of agricultural labour.

These studies would only give rise to publications if they were sufficiently advanced and if financial resources permitted; for the present the competent services should assemble the documentation and compile, according to a methodical system, a regular series of comparative reports, which would facilitate the prompt solution of problems arising out of the evolution of the agricultural economy.

* * *

(f) *Draft Resolution submitted by the American Delegation on report No. 8: Influence of Industrial Inventions upon Agriculture and the Marketing of Agricultural Products.*

" The General Assembly:

Having considered the report of the Government of the Netherlands (No. 8) " Influence of Industrial Inventions upon Agriculture and the Marketing of Agricultural Products (Raw Materials) "

Requests the Permanent Committee to consider the inclusion in the programme of work of the International Institute of Agriculture, the study of the problem of the influence of industrial inventions on agriculture and on the marketing of agricultural products, and to publish regularly the results of such studies ".

* * *

(g) *Draft Resolution submitted by the Belgian Delegation on report No. 10: Improvement of the position of small farmers.*

" The General Assembly urgently recommends the Institute to send a ~~yearly~~ questionnaire to the various countries for the purpose of publishing a report on the progress achieved year by year in each country in the improvement of the living conditions of farmers and in the development of rural culture in its moral, family and general social aspects ".

every second year

INTERNATIONAL INSTITUTE OF AGRICULTURE

XIVTH GENERAL ASSEMBLY

DAILY BULLETIN

No. 5

Saturday 28 May 1938

SUMMARY

Members of the General Assembly are asked to call at the Correspondence Boxes (First Floor) before and after each meeting so as to collect the documents, correspondence and invitations.

PRINTING OFFICE 'DITTA CARLO COLOMBO' — ROME 1938

I.

AGENDA FOR SATURDAY 28 MAY 1938

9.30 a. m.

PLENARY SESSION

(ASSEMBLY HALL).

1. — Report of the Ist Committee (*Reporter:* Mr. HARKNESS).

2. — Vote on the resolutions on the Report of the Ist Committee.

3. — Report No. 1 of the Mixed Committee (*Reporter:* M. BERNARD).

4. — Vote on the resolutions on Report No. 1 of the Mixed Committee.

5. — Report No. 2 of the Mixed Committee (*Reporter:* M. BOREL).

6. — Vote on the resolutions on Report No. 2 of the Mixed Committee.

7. — Resolution (No. XVIII) proposed by the Dutch delegation and submitted to the Plenary Session by the Co-ordinating Committee.

8. — Fixation of date of next General Assembly.

9. — Closure of the XIVth General Assembly.

II.

RESOLUTIONS SUBMITTED BY THE CO-ORDINATING COMMITTEE TO THE VOTE OF THE PLENARY CLOSING SESSION OF THE ASSEMBLY

A.

Resolutions on the Report of the Ist Committee.

I. — Diplomatic immunities.

The XIV General Assembly of the International Institute of Agriculture,

in acknowledgement of the steps taken in the name of the Permanent Committee by its President, H. E. M. Acerbo to obtain whatever improvements are possible in the application of the Italian law on diplomatic privileges and prerogatives for the Permanent Committee and the officials of the Institute, expresses to him their thanks and recognition of the steps taken to solve this delicate question.

The General Assembly,

is pleased to hope that this question will be resolved as soon and as satisfactorily as possible, after taking into account the treatment accorded by the League of Nations, the International Labour Office, the Permanent Court of International Justice at the Hague.

II. — Budgetary Questions.

The General Assembly:

(1) *Approves the Accounts of Receipts and Expenditure for the financial years 1936 and 1937.*

(2) *Takes note of the budget for 1938, as approved by the Permanent Committee.*

(3) *Votes, to meet the expenditure of 1939, a maximum sum of lire 6,950,000, it being understood that:* (a) *if the receipts to be realized in the course of that year are unlikely to reach this sum of Lit. 6,950,000, steps will be taken to reduce expenditure to the level of receipts expected to materialize in the course of that year, and* (b) *if the receipts to be realized in 1939 are likely to exceed materially the sum of Lit. 6,950,000, an amount not exceeding one-half of such excess may be applied to increase the sum allowed for expenditure in 1939.*

(4) *Votes also to meet the expenditure in 1940 a maximum of Lit. 6,950,000 subject to the same conditions as in 3 above.*

III. — Financial Administration.

Taking note of the Report of " Société Anonyme Fiduciaire Suisse " on the accounts for the years 1936 and 1937, the General Assembly,

thanks and congratulates the Permanent Committee and the Administrative Services on the careful and wise manner in which the resources of the Institute have been handled in a particularly difficult period. It expresses the wish that the same attitude be adopted in the future.

IV. — Thanks to the Permanent Committee to the Secretary General and to the Staff.

The General Assembly,

after having expressed its thanks to the Permanent Committee,

takes note of the report submitted by the Secretary General, congratulates him on his work and wishes further to thank the Staff of the Institute for the devotion and energy with which it carried out its work.

V. — Direction of the Work of the Institute.

The General Assembly,

having considered the Report of the General Secretary and the Finance Report,

is of the opinion that in arranging the future work of the Institute, the Permanent Committee should give first consideration to the maintenance and improvement of the regular services, particularly in the statistical, economic and social fields, and that these services should be regarded as constituting a first charge on the funds of the Institute.

VI. — Ratification of Diplomatic Conventions.

The General Assembly,

expresses the wish that, in order that the diplomatic conventions concluded under the auspices of the Institute might come into force, they should be ratified by those States which have not already done so.

VII. — German Edition of Publications.

The General Assembly,

asks the Permanent Committee to consider as soon as possible the re-establishment of a German edition of the most important publications of the Institute, particularly those in the field of economics.

B.

Resolutions on Report No. 1 of the Mixed Committee.

VIII. — The Cinema in Agriculture.

The General Assembly,

recommends the Permanent Committee to study in detail the practical means of developing the exchange of films of agricultural interest between different countries and, in particular, to publish periodically a list of the films reported to them by the Member Governments, taking as their guide the idea expressed during the discussion.

IX. — Broadcasting.

The General Assembly,

approves the report of MM. Bilbao and Paulucci di Calboli regarding rural broadcasting and brings to the special attention of the Permanent Committee the conclusions of this report emphasizing that the aims should be at the same time technical, vocational, educational, social and domestic.

X. — Nutrition.

(A) *The General Assembly,*

having studied the Reports of (1) Dr. Van Rijn on « The Rôle of the International Institute of Agriculture in the Study of the Nutrition Problem », (2) M. Queuille on behalf of the French Government on « Hygiene in Nutrition and Agriculture » and (3) Dr. Staniewicz on behalf of the Polish Government on « Unemployment and Undernutrition of the Rural Population »:

(1) considers that, having regard to the evidence of malnutrition in all countries and to the serious undernutrition among both the rural and urban populations in many countries, the adoption by Governments of nutrition policies is a matter of importance to agricultural producers;

(2) recommends in agreement with the Assembly of the League of Nations, that Governments should establish national nutrition committees and urges upon Governments that agriculture should be effectively represented on such committees;

(3) welcomes the action taken by the Permanent Committee in contributing in any important fashion to the international study of nutrition problems and decides that the International Institute of Agriculture should continue and intensify the study of these problems, especially in relation to agricultural production, consumption and prices;

(4) decides to co-operate closely with other official international bodies and to supply Governments with information designed to assist in the development of active nutrition policies;

(5) *draws the attention of Governments to the problem of undernutrition among the rural population of certain countries with the object of indicating ways in which this state of affairs can be ameliorated;*

(6) *directs the attention of Governments to the malnutrition of the rural population which may result, among other reasons, from foodstuffs grown on unsuitable soils, from poor husbandry, etc.*

(B) *The General Assembly,*

in view of the importance of the rational feeding of livestock in the reduction of the costs of production and in the improvement of the quality of food-stuffs of animal origin, milk and milk products, meat and eggs,

invites the Permanent Committee to direct its work on nutrition not only towards questions relating to the production of foodstuffs for human consumption but also to the problem of the rational feeding of livestock.

Further, the General Assembly,

recognizing that a great volume of scientific work is being conducted in many countries, asks the Permanent Committee to consider the desirability of action for the coordination of this work and for the interpretation of its most important findings in practical terms which can be applied by farmers.

C.

Resolutions on Report No. 2 of the Mixed Committee.

XI. — Monographs on the principal agricultural commodities on the world markets.

The General Asssembly,

having noted with satisfaction the publication of two new monographs, in the series of studies of the principal agricultural products on the world markets, on Production of and Trade in Fats and Oils and on World Production of Meat,

recommends that the Permanent Committee continue to give attention to studies in this series to cover other of the principal commodities.

XII. — Survey of the Agricultural Resources of the World.

The General Assembly,

having taken note of the Report submitted in the name of the United States Delegation by Mr. Marquis on the subject of a Survey of World Agricultural Resources, recognizes the need for further collaboration between the several international agricultural organizations in the preparation of information bearing upon international subiects and also recognizes the importance and value of comparability in the information published.

And

calls the attention of the Permanent Committee to the proposal and suggests that, after consultation with representatives of the several organizations, it should consider the possiblity of taking the necessary steps to organize and complete such a survey in collaboration with these organizations within the limits of the available resources of the Institute.

XIII. — Statistics of hard wheats.

The General Assembly,

asks the Secretariat General to approach the countries producing hard wheats with a view to their adopting a common method in the preparation of statistics on the production of these varieties taking into account their botanical characters.

XIV. — The Instability of Farmers' Earnings and the means of stabilizing them.

The General Assembly,

having examined the report presented on behalf of the Permanent Committee on the instability of farmers' earnings and on the means of stabilizing them, invites the Permanent Committee to examine the possibility of realizing the proposals made by the Reporter and, in particular, the following points:

(1) To improve information on crop prospects so that they may be known at critical stages of growth;

(2) To attempt to estimate the magnitude and the causes of variations in the annual crops above or below the normal.

(3) To attempt to estimate methodically the gross annual income of agriculture in some countries, if possible from all crops or at least from the more important, with a view to compiling general indices of agricultural activity;

(4) To continue to study Governmental measures affecting the prices of agricultural products, paying attention to the circumstances prompting such measures;

(5) To study the relation between the production and marketing of agricultural products which compete with, or act as substitutes for, each other, in order to try to forecast the changes which such competition or substitution may have on the existing agricultural situation.

(6) To continue to follow with the closest attention all technical improvements and methods of occupational organization, of co-operation, of credit, of encouragement and of protection of farmers which might import more stability to the wages of agricultural labour.

These studies would only give rise to publications if they were sufficiently advanced and if financial resources permitted; for the present the competent services should assemble the documentation and compile, according to a methodical system, a regular series of comparative reports, which would facilitate the prompt solution of problems arising out of the evolution of the agricultural economy.

XV. — Influence of Industrial Inventions upon Agriculture and on the Marketing of Agricultural Products.

The General Assembly:

having considered the report of the Government of the Netherlands (No. 8) " Influence of Industrial Inventions upon Agriculture and the Marketing of Agricultural Products (Raw Materials) ".

requests the Permanent Committee to consider the inclusion in the programme of work of the International Institute of Agriculture, the study of the problem of the influence of industrial inventions on agriculture and on the marketing of agricultural products, and to publish regularly the results of such studies.

XVI. — Improvement of the conditions of farmers.

The General Assembly,

having examined the Report of the Government of Finland and having heard the communicaton of the Belgian Delegation, recommends the Permanent Committee to give its attention to questions concerning the improvement of the position of farmers and their families.

It also invites the Permanent Committee to examine to what extent the International Institute of Agriculture can undertake the publication of monographs dealing with the measures intended to improve the material and social conditions of farmers and of their families in the countries which have done exemplary work along these lines.

XVII. — Activity of the Institute regarding agricultural co-operation.

The General Assembly,

having examined the Report presented on behalf of the Government of Finland by M. J. H. Konttinen on the intensification of the activity of the International Institute of Agriculture regarding studies in agricultural co-operation,

expresses the hope that the Permanent Committee will continue to give this question its attention and study in what degree and to what extent it will be possible to undertake in 1939 and 1940 a methodical survey of the situation of the agricultural co-operative movement, of its methods and of the results achieved in various countries.

(D).

Resolutions of the Dutch delegation submitted to the plenary Session by the Co-ordinating Committee.

XVIII. — Thanks to the « Rockfeller Foundation ».

The General Assembly,

considering the assistance rendered to the Institute in its work by grants of funds by the Rockfeller Foundation, particularly in respect to the improvement of the library and in connection with the preparation of the report on « Government

Measures and their Effects upon Agricultural Trade » *begun under the direction of the former United States Delegate, Dr. H. C. Taylor,*

expresses to the Rockfeller Foundation its sincere gratitude for the interest which that organisation has shown and the substantial assistance which it has accorded to the Institute during several years.

III.

REPORT OF THE MEETING OF FRIDAY 27 MAY 1938

(MORNING)

JOINT COMMITTEE

(SECOND AND THIRD COMMITTEES COMBINED).

The Session opened at 9.40 a. m. with M. TIBOR DE PECHY (*Hungary*), President of the Third Committee in the chair.

The PRESIDENT asked the meeting to consider item 1 of the Agenda: Draft resolution of the American Delegation concerning *monographs on the principal agricultural products of world trade.* This resolution was carried unanimously.

The PRESIDENT then asked the Committee to consider item 2 of the agenda: *Draft resolution of the American Delegation concerning a study of world agricultural resources.* This resolution was adopted unanimously.

The amendment submitted by M. G. AZZI (*Italy*), to this resolution was referred, on the proposal of M. G. FILENI (*Italy*), to the Permanent Committee in the form of a recommendation.

Item 3 of the agenda: *Draft resolution concerning statistics of hard wheat* submitted by the French Delegation. This gave rise to a discussion in which MM. A. BLACK (*United States*), AUGÉ-LARIBÉ (*France*), F. MCDOUGALL (*Australia*) took part. This draft resolution, after the adoption of an amendment submitted by the American Delegation, was unanimously adopted.

The PRESIDENT then opened the debate on item 4 of the agenda: Report No. 4 the *Instability of Farmers' Earnings and the means of reducing it.* This report was unanimously adopted. On the draft resolution on this report (*See* item 4-*a* of the agenda) submitted by M. AUGÉ-LARIBÉ (*France*), Sir FIROZ KHAN NOON (*India*) and M. J. GALBRAITH (*United States*) spoke. M. AUGÉ-LARIBÉ (*France*) gave certain explanations and the draft resolution, modified by an amendment proposed by the Indian Delegation, was unanimously adopted.

The PRESIDENT then proposed that the Committee should pass to item 5 of the agenda: Report No. 8: *Influence of Industrial Inventions upon Agriculture and the Marketing of Agricultural Products*, which had not yet been discussed and on which MM. W. WEBER (*Germany*) and L. STEERE (*United States*), spoke. The draft resolution on this report was unanimously adopted.

The PRESIDENT then asked the Committee to consider item 6 of the agenda: Report No. 10: *Publication by the International Institute of Agriculture of information on the measures taken in the various countries for the improvement of the position of small farmers.* He called upon M. DE VUYST (*Belgium*) who explained his point of view on the improvement of the position of small farmers. Lord FEVERSHAM, Head of the British Delegation, spoke. The Secretary General pointed out that the Institute is taking part in the organization of the Conference on Rural Life which is to meet at Geneva in July 1939 and raised the question whether the suggestion put forward by M. DE VUYST (*Belgium*) would not duplicate the preparatory work for this Conference.

There were thus before the Committee two draft resolutions, one submitted by the Belgian Delegation (item 5-*a* of the agenda), the other, by the Finnish Delegation during the session. After a long discussion in which MM. W. STANIEWICZ (*Poland*), F. McDOUGALL (*Australia*) and W. WEBER (*Germany*) took part, and a proposal M. H. VAN ORSHOVEN (*Belgium*) to combine the two drafts, the Belgian Delegation withdrew its draft resolution. This Delegation was satisfied to present an amendment to the draft resolution submitted by the Finnish Delegation, which was then unanimously carried.

The Committee, on the proposal of the PRESIDENT, proceeded to consider item 7 of the Agenda: Report No. 11 on the *Intensification of the activity of the International Institute of Agriculture regarding studies on Agricultural Co-operation.* MM. MASSÉ (*France*), HYNNINEN (*Finland*) and VAN ORSHOVEN (*Belgium*) made some comments. The Delegation of Finland submitted a draft resolution which, after observations by M. ROLDES (*France*), was passed unanimously.

The PRESIDENT read item 8 of the Agenda: Report No. 12 on *Unemployment in the country and the resulting decrease in consumption by the rural population.* M. STANIEWICZ (*Poland*), who submitted the Report, made some comments. Mr. McDOUGALL (*Australia*) drew attention to the importance of the questions to be studied which had been indicated in the Report. No draft resolution was presented, and M. STANIEWICZ (*Poland*) declared himself content with the mention of his Report in the resolution on nutrition.

The Session was closed at 12.20 p.m.

G. A. 1938 - No. 7

INTERNATIONAL INSTITUTE OF AGRICULTURE

XIVTH GENERAL ASSEMBLY

(23 May 1938)

A SURVEY OF THE AGRICULTURAL RESOURCES OF THE WORLD

PRESENTED, IN THE NAME OF THE PERMANENT COMMITTEE, TO THE XIV GENERAL ASSEMBLY

by

J. CLYDE MARQUIS

Delegate of the United States, Philippine Islands, Puerto Rico Virgin Islands, Hawaii.

INTRODUCTION.

The great expansion of the sources of supply of agricultural products over the whole world during the nineteenth century has of necessity made all branches of agriculture the subject of world wide studies. Recognition of the need for such world studies led to the foundation of the International Institute of Agriculture. The World War and the following depressions deeply affecting normal supplies and trade gave rise to increased interest in the study of the agricultural possibilities of various countries of the world and of international relations in the agricultural field. Then came the enormous number of new government measures which have affected relations between the nations in the most direct way.

The ministries of agriculture that existed in 1918 have been expanded and new ones established in other countries. Agricultural scientists and economists have devoted much labor to the comparative study of the agriculture of their own countries and that of other countries. Several countries now maintain numerous representatives of their Ministries of Agriculture in other countries, not only to gather current information on production and trade but also to make detailed studies of the conditions of production, soils, climate, crops, etc. in the other countries. Many private organizations have also been developed to gather world wide information on such commodities as wheat, sugar, tea and rubber.

Out of this work of the past decade has come a great mass of useful information on many agricultural products and many countries, but it is lacking in uniformity and comparability. Those who have made comparisons between countries have nearly always held the point of view of their own nation and the analysis has not been made from the international point of view. This point of view is not easy to attain and it is perhaps better developed at the Institute than any where else in the world at the present moment, due to the fact that the staff of the Institute has a longer experience in international scientific collaboration than the staff of any other institution.

Until recently there were great gaps in our knowledge of world agriculture. We knew but little, from a scientific standpoint, of the soils, crops and potential production of many areas. Statistics of agriculture were scarce and unreliable. While they are yet in need of improvement, yet we now have enough to serve as a basis for a general survey of the world. As we approach the Second World Agricultural Census for 1940, we find the statistics of many countries greatly improved over what they were in 1930.

Many International organizations of agricultural scientists and economists have been started during recent years covering such subjects as soils, agricultural meteorology, and population. But there remains a need for coordination of this work into a single general survey for the whole world which will make it more useful to those who are concerned with the international relations of the nations. Informal and unofficial inquiry among the leaders of many organizations and institutions has disclosed universal agreement that a broad international study of the agricultural recources of the world should be begun at an early date.

The International Institute of Agriculture is without question the agency to organize and conduct such a survey. The proposed project falls clearly within the Convention which says that the Institute:

" Confining its activities to the international sphere shall: submit ...for the approval of the various governments measures for the protection of the common interests of farmers and for the improvement of their conditions, *after preliminary study of all requisite sources of information, ...* ".

The vastness of such a project might make it appear an impossible one for the Institute with its present limited resources. But the proposal is that the Institute act as the center to assemble, analyze and compare the best available data from the international standpoint and to publish it in a form which will be most useful to all the countries. This requires that it be not too detailed but well illustrated by maps, charts and well condensed statistics.

Scope of the Survey.

The project for a Survey of the Agricultural Resources of the World may be better understood by considering the following general outline of some of the principal parts which have been suggested by the preliminary discussions with experts in each of the main divisions.

PART I. – A *soil* map of the world:

This map may be as complete and detailed as the broad scope of the subject will permit within reasonable limits of publication, together with suitable text.

PART II. – A *climate and meteorological* map of the world.

This would show temperatures, rain-fall, frosts, winds, sunshine and seasons with an analysis of crop growing seasons.

PART III. – A *Crops and Other Vegetation* map of the world.

This would present the best available information on present areas of production of the principal crops as well as the limits of potential crop production.

PART IV. – A Statistical *Survey of present Crop and Livestock Production* of the world.

This would include areas, yields and total production, the type of information which comes directly from the World Agricultural Census and other statistics now assembled by the Institute. This material must be presented in graphic, condensed form for international comparison.

PART V. – A survey of the *Trade in Agricultural Products* of the world.

This should show in graphic form the recent past and present movement of farm products from areas of production to areas of consumption throughout the world.

PART VI. – A survey of the *Farm and Urban population* of the world.

This should show the distribution of population on the land and elsewhere and would be a basis for the next and final part on the needs of various countries for agricultural products.

PART VII. – *Present and Potential Production and Consumption of Agricultural products of the world:*

Under this final chapter would come the comparative analysis of the agricultural resources of the world in relation to the needs of the people. It should be the final and most useful chapter from the international standpoint.

METHOD OF THE SURVEY.

A project of this great size and importance requires careful planning by experts who are thoroughly familiar with the various subjects involved. It is contemplated that the Institute will begin by consulting with those international organizations that are working in each of the special fields involved; then a plan for each part would be made and the method of assembling the material decided. This is essentially a project of collaboration between the agricultural authorities of all the world and in that regard comes within the scope of the Institute in an unusual manner.

The groups of authorities concerned with each part should be consulted for two principal reasons:

(1) To outline the work so that the task may *be completed within a reasonable time* and

(2) to determine the most valuable *sources of reliable information* and what *special research* should be done.

We are now informed that materials exist from which a fairly complete world *soil map* can be made. Soil survey work has progressed rapidly during the last ten years until the International Soil Scientists now have available sufficient material with which to proceed. For example, a fairly complete survey of the soils of China has been published recently. The extensive surveys by the British Empire, by the Soviet Union and in the United States of America, together with those of other countries of smaller areas, furnish a vast amount of material. There are but few large areas remaining in the world without at least preliminary surveys. The execution of a world-wide project might be a stimulus to those countries who have not completed their surveys, to give them special attention. Informal inquiries among soil scientists disclose a unanimous interest in such a project.

In the field of *agricultural meteorology* there now exists a sub-committee of the International Meteorologists designated to cooperate with the International Institute of Agriculture, appointed at a meeting at Salzburg in 1937. Members of this committee have stated that there is now available sufficient material from which to prepare world maps on climate in relation to agriculture. In this instance the cooperating agency being already available, work could begin without delay.

On the subject of *crops, culture and adaptability* the materials are probably more widely scattered but none the less adequate. This subject has had close study within recent years, particularly since the usual trade in agricultural products has been disturbed by changing government policies and interventions. There is material obtainable in almost every country on this subject. This section of the proposed world survey has had recent consideration by the Institute in the series of monographs on commodities, begun on the recommendation of the General Assembly of 1934. As other monographs are completed materials are becoming available which will be useful in the world survey. The general world survey would necessarily involve less detail than is contained in the commodity studies and need not duplicate or replace them to any serious extent.

The subject of *world agricultural production* comes within the statistical work of the Institute and involves the use of the latest available data at the time that the part is fixed for publication together with analysis and comparisons. The results of the World Agricultural Census for 1940 should also be useful. The work for this part of the survey consists of analyzing and presenting the data in a form for international comparison.

The information *on trade in agricultural products* is also available in a large number of national publications as a result of recent trade discussions but it needs extensive study and analysis. Numerous recent publications of the Institute touch this subject.

Studies of *Population changes* in various countries have been made in increasing numbers in recent years. An international organization and several institutions in different countries devote extensive research to this subject. Inquiry among them shows a great interest in collaboration such as is proposed here. The vital statistics of many countries have been greatly improved during the last few years.

The final part of the Survey would probably be the most important to the countries. It would show the balance-sheet which is necessary to a clear understanding of the trends in world-agriculture.

A criticism of the work of the International Institute of Agriculture in the past has been that it lacked definite long-time objective and that it has not attempted enough projects of broad international character, touching the interest of a majority of member States. It is believed that the development of this plan would give purpose and usefulness for much of the work of the Institute which will commend it to the high favor of a large number of countries.

The usefulness of such a survey of world agricultural resources to the Member States of the Institute lies particularly in the analysis which must be made to show the distribution of these resources. The extent of this analysis can probably best be determined by a commission of experts after the first drafts of several sections have been outlined. That would be a part of the project which must be deferred towards its conclusion.

The time necessary to complete such a project can not, of course, be fixed in advance. In order to arrive at a uniform series of publications, however, it would be necessary for the experts to estimate rather closely the time necessary to complete the work. Similar projects in some individual countries have been spread over a period of years, depending upon the resources available. Much benefit would result however from the preparation of a comprehensive plan at the outset even though later modifications might affect the completion of a part.

It is the conclusion of those who have considered this proposal that the time has arrived for the Institute to begin planning such a comprehensive work.

Rome, le 28 février 1838.

The Reporter

J. Clyde Marquis

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"...AN EMPIRE IS
REBORN ON THE
FATEFUL HILLS OF ROME"

MUSSOLINI - MAY 9, 1936, XIV.

ITALY AND HER EMPIRE

ATLAS AND TEXT

EDITOR ENRICO E. ORTELLI - GENOA

PROF. GIOVANNI DE AGOSTINI

ITALY AND HER EMPIRE

PERFORATED POCKET ATLAS, WITH 16 COLORED MAPS AND EXPLANATORY TEXT

TRANSLATED BY E. COPE

ENRICO E. ORTELLI - EDITOR
VIA VALLECHIARA, 3 · GENOA

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ASSEMBLY OF OCTOBER 2nd 1935
XIIIth OF FASCISM

Blackshirts of the Revolution! Men and Women of all Italy! Italians throughout the world, beyond the mountains and overseas: listen to my words!

A momentous hour for the history of our Country is about to strike. Twenty million people are at this very minute thronging all the squares of Italy. Never before in the history of humanity has a more colossal spectacle been witnessed.

Twenty million men: a single heart, a single will, a single decision. Their manifestation must prove and does prove to the world that Italy and Fascism are welded in perfect, absolute, unchangeable unity. The contrary may be believed only by minds enveloped in the fog of the most foolish illusions or living in torpid and crass ignorance of the men and affairs of Italy, of this Italy of 1935, the XIIIth Year of the Fascist Era.

For many months the wheel of destiny, under the impulse of our calm determination, has been moving towards its goal; in these hours its rhythm is faster and nothing more can stop it.

It is not only an army marching to its objectives, it is a whole people of forty-four million souls, against which the blackest injustice is being perpetrated: that of attempting to deprive us of a small place in the sunshine.

When in 1915 Italy staked her all and mingled her fate with that of the Allies, how our courage was admired, what promises did we not receive! But after the common victory, to which Italy had given the immense contribution of 670,000 dead, 400,000 disabled, and one million wounded, at the table of an usurious peace Italy only received a few crumbs of the rich colonial booty.

We have patiently waited thirteen years, during which the ring of egotism stifling our vitality has still further closed around us. With Ethiopia we have had patience for forty long years. Enough!

At the League of Nations, instead of recognizing our rights, they speak of sanctions.

Until I have proof to the contrary I refuse to believe that the authentic, the generous people of France can give their support to sanctions. The six thousand dead of Bligny, who fell in a heroic attack which elicited the admiration of the enemy commander himself, would startle in their graves.

I equally refuse to believe that the authentic people of Great Britain, which never had any dissension with Italy, are willing to risk pushing Europe on the road to disaster in support of an African country universally condemned as a land without a shadow of civilization.

To economic sanctions we will oppose our discipline, our sobriety, our spirit of sacrifice. To military sanctions we shall reply with military measures. To acts of war we shall reply with acts of war. Let nobody think we may be bowed down until we have strenuously fought. A people jealous of its honour cannot use different words or take another attitude.

But let it be said once more in the most categorical manner—and at this very moment I solemnly pledge myself to this course—that we will do everything possible to prevent this conflict of a colonial character from assuming the character and the extent of an European conflict. Such a conflict may be in the desires of those who see in a new war the revenge for their fallen temples, but not in ours.

Never as in this historical period has the Italian people revealed the qualities of its spirit and the power of its character. And it is against this people, to which humanity owes some of its greatest conquests, and it is against this people of poets, of artists, of heroes, of saints, of navigators, of pioneers, it is against this people that they dare mention the application of sanctions.

Proletarian and Fascist Italy, Italy of Vittorio Veneto and of the Revolution, arise! Let the cry of your decision fill the skies, let it comfort the soldiers waiting in Africa, let it spur on your friends and warn your enemies in all parts of the world: a cry for justice, a cry of victory!

MUSSOLINI

PROCLAMATION OF THE EMPIRE

MAY 9th 1936 XIVth

Officers, non-commissioned officers, soldiers and all Armed forces of the State in Africa and in Italy, Blackshirts of the Revolution, men and women of Italy, at Home and throughout the world, listen to my words!

With the decisions you shall hear in a few minutes, and which were acclaimed by the Grand Council of Fascism, a great event has been accomplished; to-day, the 9th of May of the XIVth year of the Fascist Era, the destiny of Ethiopia in sealed. All knots were sundered by our glistening sword, and the African victory remains in the history of the Fatherland, entire and pure, as the fallen and surviving legionaries dreamt of it and willed it.

Italy finally has her Empire, a Fascist Empire since it bears the indestructible signs of the will-power of the Roman Lictor; for this is the goal towards which, during fourteen years, the overflowing and disciplined energies of the young, sturdy generations of Italy were encouraged. An Empire of peace, for Italy wants peace for herself and for all and decides for war only when she is compelled by the imperious, unavoidable necessities of her life. An Empire of civilization and humanity for all the Peoples of Ethiopia. It is in the traditions of Rome that after having vanquished them, she always gave other peoples a partnership in her destiny.

Italians, here is the law which concludes one period of our history and inaugurates another, like an immense breach opened for all future possibilities:

First: **The territories and peoples which belonged to the Ethiopian Empire are placed under the full and direct sovereignty of the Kingdom of Italy.**

Second: **The title of Emperor of Ethiopia is assumed for Himself and His Successors by the King of Italy.**

Officers, non-commissioned officers, soldiers of all the Armed forces of the State, in Africa and Italy, Blackshirts, Italian men and women! The Italians created the Empire with their blood. They shall fertilize it with their work, and defend it against all comers with their arms. In this supreme certainty, legionaries, lift your emblems, your swords and your hearts once more to salute, after fifteen centuries, an Empire reborn on the fateful hills of Rome.

Shall you be worthy of it? (*the crowd bursts out in a formidable* "Yes!").

This cry is like a sacred oath which binds you before God and man for life and death.

Blackshirts, Legionaries, salute the King!

MUSSOLINI

PHYSICAL DESCRIPTION OF ITALY

"The beautiful Land
which Appennine divides and sea, and Alps surround".
(PETRARCH)

POSITION. Italy's destiny and her mission are due to her very geographical positions. She is situated at the centre of the Mediterranean, where ancient civilization flourished, and on the shores of which sea many peoples of Europe, Asia and Africa live and carry on their activities. For through Gibraltar and Suez these peoples are linked to the main highways of world trade.

COAST. Italy's sea-coast is bounded by the Ligurian Sea, forming the **gulfs** of Genoa and Spezia; by the Tyrrhenian Sea, with the gulfs of Gaeta, Naples, Salerno, Policastro and Sant'Eufemia; by the Ionian Sea, with the gulf of Taranto; and by the Adriatic, with the gulfs of Manfredonia, Venice, Trieste, Quarnaro.
Besides the great **islands** of Sicily, Sardinia and Corsica (the latter politically belonging to France), the most important are the Tuscan Archipelago with the isle of Elba, and the Lipari and Egadi islands around Sicily. The principal **peninsulas** are those of Calabria, Salento, Gargano and Istria. The main **straits** and **channels** are the straits of Piombino and the channel of Corsica, the Bocche di Bonifacio, between Sardinia and Corsica; the straits of Messina, and the Channel of Otranto which is the entrance into the Adriatic.

MOUNTAINS. Italy is a prevalently mountainous and hilly country. Her mountains belong to three systems: the Alpine, the Appennine, and the Corsican-Sardinian. The **Italian Alps** are divided into different ranges: the **Occidental** (Maritime, Cozie and Graie), the **Central** (Pennine, Lepontine and Rhetic) and the **Oriental** (Atesine, Carnic and Julian). The **Appennine** is subdivided into the **Northern** (Ligurian and Tuscan-Emilian Appennine), **Central** (Umbrian and Abruzzo Appennine) and **Southern** (Neapolitan, Lucanian and Calabrian Appennine) ranges. Beyond the straits the latter are continued by the mountains of Sicily.

PLAINS. The **Northern Plain** (Valley of the Po, Veneto and Romagna) is the wealthiest region in Italy, being endowed with a favorable climate, a very fertile soil, numerous watercourses and an excellent geographic position. The **Plain of Campania** is also fertile and thickly populated. Other minor plains are the **Tavoliere of Puglia,** the **Pontine Agro,** the **Plain of Salerno** and others, where reclamation has enormously increased productivity.

RIVERS. Northern Italy is bountifully endowed with perennial watercourses, while southern Italy and the Islands are rather deficient in them. The following rivers flow into the **Adriatic:** the Isonzo, the Tagliamento, the Piave, the Adige, the Po (whose tributaries are, to the north, the Dora Riparia, Dora Baltea, Sesia, Ticino, Adda, Oglio and Mincio, to the south the Tanaro, Secchia and Panaro), the Reno, the Metauro, the Tronto, the Pescara and the Ofanto. In the **Ionian Sea,** the Bradano, the Crati and the Simeto. In the **Tyrrhenian Sea,** the Sele, the Volturno, the Garigliano, the Tiber, the Ombrone and the Arno rivers.

LAKES. In the Alpine regions the best known lakes are the Lago Maggiore and the Lakes of Lugano, Como, Iseo and Garda; in the Appennine region, the Thrasymene, Bracciano and Bolsena.

CLIMATE. Italy enjoys a mild climate, without excesses of heat or cold, owing to her privileged geographical position. The **rainfall** in northern Italy is plentiful in all seasons, especially in Spring and Autumn; in the islands and the South the winter season is rainy while the summer in excessively dry, to the great detriment of agriculture.

ENRICO E. ORTELLI - GENOVA

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POLITICAL DESCRIPTION OF ITALY

POPULATION. Italy belongs to the class of densely populated states. Upon a territory of 310.000 sq. km. there are 43,500,000 inhabitants, that is to say 140 inhabitants per square kilometre.

LANGUAGE. Almost 98% of the Italians speak the Italian language or related dialects. The population of foreign origin is but a slight minority.

RELIGION. More than 99% of the Italians profess the Catholic Religion, which is also the State Religion. The relations between Church and State are regulated by the Lateran Treaty of February 11th, 1929 through which the Duce happily put an end to former disagreements.

GOVERNMENT. The Kingdom of Italy is a constitutional monarchy, hereditary in the House of Savoy. The legislative power is vested in the King and Parliament (Senate and Chamber of Deputies); the executive power is exercised by the King through his responsible Ministers, presided over by the Prime Minister, Head of the Government. The supreme organ of the Government is the **Grand Council of Fascism,** which directs all Government and Party activities and likewise all Cultural and Corporative Economic organizations in the Nation.
Italy is a Fascist State, being regulated according to the political conception, following which individual interests are always subordinate to the supreme interest of the national collectivity. The Fascist State is in constant touch with the population whose necessities it studies, whose every-day life it follows, whose spirit it educates; it seconds the best individual inclinations and, through the Corporative Organization, organizes productive activities to the greater advantage of the Nation as a whole. Wherefore the Fascist State, a superb and genial realization of Benito Mussolini, summarizes, as stated in the Labour Charter, the total moral, political and economic unity of the Nation.

ADMINISTRATION. The Kingdom is divided into 94 provinces, divided as follows, according to regions:
Piedmont: Turin, Cuneo, Alessandria, Asti, Novara, Vercelli, Aosta.
Liguria: Genoa, La Spezia, Savona, Imperia.
Lombardy: Milan, Como, Varese, Brescia, Bergamo, Sondrio, Pavia, Cremona, Mantua
Veneto: Venice, Padua, Vicenza, Verona, Rovigo, Treviso, Belluno.
Venezia Giulia: Trieste, Udine, Gorizia, Pola, Fiume, Zara.
Venezia Tridentina: Trento, Bolzano.
Emilia: Bologna, Ferrara, Ravenna, Forlì, Modena, Reggio, Parma, Piacenza.
Tuscany: Florence, Pistoia, Pisa, Lucca, Massa-Carrara, Livorno, Grosseto, Siena, [Arezzo
Umbria: Perugia and Terni.
Marche: Ancona, Pesaro, Macerata, Ascoli.
Latium: Rome, Viterbo, Rieti, Frosinone, Littoria.
Abruzzo and Molise: Aquila, Teramo, Pescara, Chieti, Campobasso.
Campania: Naples, Avellino, Benevento, Salerno.
Puglia: Bari, Foggia, Taranto, Brindisi, Lecce.
Lucania: Potenza, Matera.
Calabria: Reggio, Catanzaro, Cosenza.
Sicily: Palermo, Messina, Catania, Siracusa, Ragusa, Enna, Caltanissetta, Agrigento, [Trapani.
Sardinia: Cagliari, Nuoro, Sassari.

POPULATION OF THE PRINCIPAL CITIES.

Rome	1,200,000	Bologna	280,000	Padua	150,000
Milan	1,100,000	Venice	270,000	Taranto	140,000
Naples	900,000	Trieste	250,000	Leghorn	130,000
Turin	650,000	Catania	250,000	Brescia	130,000
Genoa	630,000	Bari	200,000	Ferrara	120,000
Palermo	420.000	Messina	200,000	Reggio Cal.	120 000
Florence	330,000	Verona	160,000	Cagliari	110,000

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ECONOMIC DESCRIPTION OF ITALY

UTILIZATION OF THE SOIL. 43% of Italian soil consists in arable land, 6% is taken up by orchards, vineyards, orange and lemon groves etc. Few countries boast such a high percentage of cultivated land. 25% of the soil is occupied by lush meadows, thin pastures or poor land which cannot be cultivated such as gullies, the edges of roadways, land bordering on the sea. 18% in wooded, most of the timber being utilized for fuel, only a minor quantity for building material. Finally a small portion, about 8%, is occupied by unproductive areas such as roads, houses, sport fields, high mountains, rivers etc.

AGRICULTURE. It is intensively practiced in Northern and Central Italy and extensively in those portions of the South and the Islands where the lack of summer rainfall and irrigation prevent intensive culture. Wheat, maize and rice are produced on a large scale, besides wine, vegetables, fruit and forage. Olives and Citrus Fruits are a specialty; hemp, sugar beets and tobacco are also very important items of production.

STOCK-RAISING. **Cattle-breeding** prevails in Northern Italy where forage is more plentiful, because rain falls there all the year round and there is proper irrigation. **Sheep** prevail in the peninsula and the islands where they graze on the hills in summer and on the plains along the coast in winter. Swine are most numerous in the North where they are bred as a side line by cheese producers. **Silkworms** are also mainly produced in the north. **Fisheries** are most active in the Adriatic and along the Sicilian coast.

MINERALS The most important regions for minerals are Tuscany for iron, iron pyrites, marble, lignite, mercury, boric acid, and others; Sardinia for zinc, lead, iron, lignite and others; Sicily for sulphur, and Venezia Giulia for lignite, aluminum minerals, zinc, mercury. However other regions are also endowed with invaluable ores, among which the iron of Cogne and bauxite in Abruzzo.

INDUSTRY. Is most active in Lombardy, Piedmont, Liguria; but there are also prosperous industrial centres around Vicenza, Verona, Venice, Trieste, Bologna, Lucca, Terni, Naples and elsewhere. All branches of industry are developed. Among mechanical industries the construction of ships, motorcars, airplanes, rolling stock and agricultural and sundry machinery prevails. In the textile group the most important are the silk, cotton and wool industries; in the group of chemical industries, synthetic products, acids, manure, explosives, artificial silk, and rubber. The industries connected with foodstuffs include mills, paste manufactories, cheese factories, sugar refineries, canned goods and other factories. The woodwork, leather, paper, ceramic, glass, printing industries and many others are also flourishing, and most of the production is manufactured with ability, good taste and perfect finish.

TRADE. Italy imports from abroad considerable amounts of raw materials necessary for her industries—raw cotton, coal, mineral oils, wool, metals, rubber, oil seed, etc.—and foodstuffs such as cereals, meat and fish; she exports finished products such as cotton textiles, silk, artificial silk and the typical products of her soil such as oranges, lemons, vegetables, hemp, olive oil, wine, sulphur, marble.

TRANSPORTATION. Italy possesses a first rate transportation system served by a thick network of asphalt roads, a well arranged railroad system with very fast trains, and a quantity of air lines centred in Rome and connecting her with all other countries in the Mediterranian and northern Europe; a powerful commercial fleet of cargo-boats, motor ships and luxurious transatlantic liners, which maintains excellent communication between Genoa, Naples and Trieste and all the other great seaports of the world.

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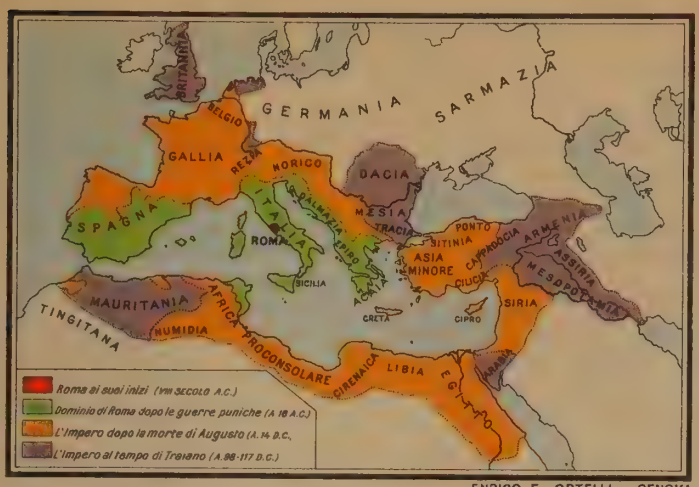
ITALIANS THROUGHOUT THE WORLD

"In everything you do, at every moment of you lives you must consider yourselves pioneers, missionaries, bearers of the Latin, Roman, Italian civilization". (MUSSOLINI)

The Italians, a nation of navigators, of pioneers, and above all of workers, have settled in all parts of the world and have everywhere left the clear impress of their genius, their initiative and their steady will. A wide-awake intelligence, a retentive memory, great inclination for art, an observant spirit, great inventiveness of mind, adaptability to any kind of work, a strong will and great patience, sobriety, thriftiness and love of the family are the characteristic gifts of the Italian race. Every form of Italian activity abroad is perfected, organized and assisted by the continuous care of the Fascist organizations and other welfare societies.
The Italians scattered throughout the world amount to about ten million, apportioned as follows:

North America, about 4 million; South America, about 4 million; Europe, 1,760,000; Africa, 200,000; Australia 30,000; Asia 10,000.
In the **United States** there are about three and a half million Italians, especially in the Northern and Eastern cities of New York, where there are 875 thousand, Philadelphia, Chicago, Baltimore, Boston, Pittsburg and others. Most of them are in good economic conditions.
The Italians of **Brasil** amount to about 2 million: they are most numerous in the Southern States, S. Paolo, Rio Grande, Minas, where the climate is more temperate, and they are engaged in coffee-planting, industry and commerce.
In **Argentine** the Italians, amounting to almost two million, are settled in all the provinces, especially those of Buenos Ayres, Santa Fè, Cordoba, where they are held in high esteem and enjoy flourishing economic conditions.
In Europe the greatest number, almost one million, resides in France. In Africa the Italians preferably inhabit the regions lapped by the Mediterranean, especially Tunis and Egypt. To-day a new field of expansion has been opened to Italian workers in East Africa.



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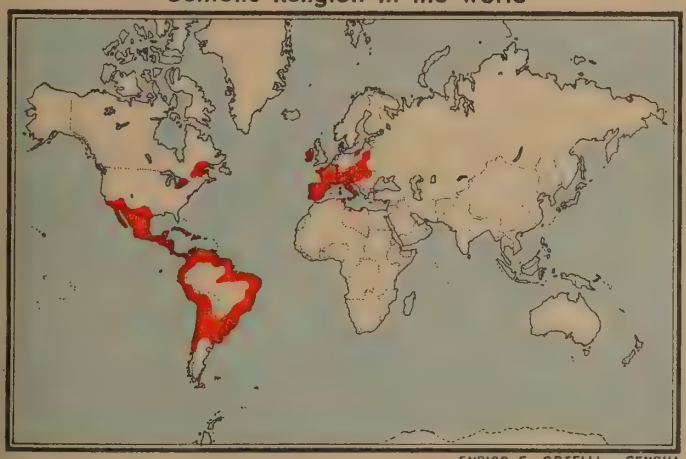
IMPERIAL ROME

"All that in the world is civilized, grand, august, it is Roman still".
(G. CARDUCCI)

Rome, heart of the Peninsula and mother of Italy, has been an Imperial city for over two thousand years. For many centuries she was the capital of the great Empire she had conquered on three continents, bringing the light of her civilization to many subject peoples. The world was indebted to Rome for roads, bridges, acqueducts, squares, temples, basilicas, baths, theatres, and above all for her wise legislation, which still is and is bound to remain the basis of civilized life Later, in the fifth century A. D., when the Roman Empire was beginning to decline, Rome occupied a preeminent position as the centre of Religion, and throughout the Middle Ages, by conciliating opposing peoples, aiding the oppressed, redeeming uncultivated land and a thousand other moral, social and political measures, she exercised a literally imperial power on men's minds.
In the XVth Century, during the Renaissance, and in succeeding centuries, art, science, and literature preserved for her a first rate position as the mistress of world civilization.
in the XIXth century, when Italy was once more united in a single Nation, Rome became the Capital of New Italy, and continued to spread her beacon light of civilization and progress: in the XXth century Fascism gave her a vigorous impulse.

Catholic Religion in the world



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On the 9th of May, 1936, fourteen years after the Fascist Government came into power, the fateful hills of Rome once more witnessed the birth of political Empire, a great African Empire garnered by the Duce who, in the words of the King "prepared, led and won the greatest colonial war recorded in history".

GOVERNMENT OF LIBIA

Libia was conquered by Italy in 1912 following a victorious war against the former Turkish rulers The submission of that vast territory to her dominion, delayed by the World War, was completed by the energy and firmness of the methods adopted by the Fascist Government between 1922 and 1929.

THE COUNTRY. The territory of Libia, almost six times the area of Italy, is part of the Saharian region. In the interior the excessive heat in the daytime and the quasi-total lack of rainfall have made the land completely arid and sterile. On the coast instead, the milder temperature due to the vicinity of the Mediterranean and a slight annual rainfall —from 20 to 40 cm.—falling in the winter months in short showers, allow the subsistence of a meagre vegetation.

THE INHABITANTS. The population, about 700,000, composed of Berber Hamites, natives of the country, and Arab Semites, of Asiatic origin, is most numerous in Tripolitania, about half a million, thinner in Cirenaica, and very sparse elsewhere. The administration of Libia is divided into the four provinces of Tripoli, Misurata, Bengasi and Derna.

AGRICULTURE. Of the huge territory of Libia only limited zones here and there can ben utilized for agriculture. The most suitable land is found in Trípolitania, on the coastal plains and on the neighbouring hills; in Cirenaica, on the foothills of the plateau sloping down to the Mediterranean and towards the neighbouring plains of Bengasi.
In the richer land endowed with wells—witness the beautiful oasis behind Tripoli—intensive gardening is practiced; on the steppes, where the crops are very uncertain agriculture is rudimental.
Of the vegetable products the most plentiful is barley, and unless there is a drought, or an invasion of locusts, is it sufficient for and sometimes exceeds the necessities of the market. Dates are the other most plentiful production, being, together with barley, the staple food of the natives. The best come from the oasis of the interior, the poorest from the coast. The production of olives is at present sufficient for local consumption. There are many fruit trees, figs, apricots, oranges, vines, pomegranates, prickly pears, etc. In Tripolitania a shrub called henna is cultivated, and from its leaves a dye for hair and cloth is extracted. Alpha grows wild in the steppes; from this herb the Neapolitans extract fibre and esparto used in the manufacture of rugs, hampers and ropes.

COLONIZATION. Italian colonization prevails in the territories of Tripoli and Bengasi; the work consists in ploughing uncultivated ground, planting fruit trees, harnessing shifting sand dunes, excavating wells, improving irrigation, building homesteads, breeding livestock etc. Every year a number of Italian farmers move over to Libia to extract wealth from the land with modern methods. At Garian a group of these farmers is engaged in the cultivation of very fine tobacco, manufactured into de-luxe cigarettes in Tripoli.

LIVESTOCK. Breeding livestock, a difficult task on account of the persistent drought, is the occupation of Beduins leading a nomadic or semi-nomadic life. A large number of sheep and goats and a more limited number of dromedaries, horses, oxen and asses are raised. Tunny fish along the coast of Tripolitania, and sponges on the shores of Cirenaica offer a means of livelihood to fishermen.

INDUSTRY. Native industries include the production of articles used locally. Witness the production of barracans and futas, worn by the Arabs; bright handwoven carpets for which Misurata is celebrated; tanned and dyed leather and skins for saddles, cushions, slippers; gold and silver wares, which are produced mostly by Hebrews; the manufacture of rugs, jars and earthenware cooking utensils. At Tripoli there are also several modern factories for tobacco and oil, mills, an electric power station, a brewery etc.

In recent times the Fascist Government has devoted special care to the maintenance of the roads and the improvement of communications, giving great impulse to trade. A fine road along the sea-coast from Tunis to Egypt was inaugurated a short time ago by the Duce. The **Arab Fascist Youth** was also organized, so that all young men of Libia may be educated and trained to the spirit of the times, and be worthy of the Mother Country.

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ITALIAN ISLANDS OF THE AEGEAN

Some islands in the Aegean sea were occupied by Italy in May 1912, during the Lybic war. Their total area is 2700 sq. km. and their population 135,000 inhabitants, who speak Greek and profess the Orthodox religion. There are fourteen inhabited islands, besides some deserted islets. The most important are Rhodes with a population of 57,000; Coo with 22,000 inhabitants; Calino, Scarpanto, Simi, Lero, Nisiro, Piscopi, Stampalia, Patmo and Castelrosso. The **climate** is extremely healthy; the summers are warm and dry, winters mild and rainy. On account of the persistent summer drought the soil is prevalently meagre pasture or bare rock. Pinewoods, cypresses, oaks and other plants belonging to the Mediterranean flora grow on about one third of the area. The proportion of land devoted to agriculture is very slight, only 7%; none the less **agriculture** is the principal source of wealth for the inhabitants of the islands. Cereals and vegetables sufficient for home consumption are farmed locally; local vines produce superb white and red grapes and renowned table wines; next in importance come fruit, figs, apricots, almonds, and garden produce, especially tomatoes, citrus fruits and olives. Tobacco is also grown and manufactured in Rhodes Besides timber the woods provide pine bark and a kind of acorn termed "vallonea" used in tanning leather.

Livestock, especially sheep and goats, and apiaries are less important items; sponge fishing is one of the principal resources for the islanders of Calino and Simi **Industry** may be said to be in its infancy: carpets similar to those manufactured in Smirne are woven, and ancient ceramic articles are reproduced and sold to the tourists; there are a few tanneries, oil distilleries etc.

Near the northern point of the island of Rhodes the city of **Rhodes** snuggles among green bowers and flowers, facing a resplendant sea, with the silhouette of the Anatolian ranges in the background, blue in summer, snowy white in winter. Behind it, a hill 90 meters high called Mt. St. Stefano arises gently, in great cultivated terraces.

The city, with a population of 24,000, includes the old town, encircled by mediaeval walls, and the surrounding suburbs of San Giorgio, Sant'Anastasia, San Giovanni and Neocosi where, in recent years, a new city has grown up around the Foro Italico and the Littorio Avenue, with tree-lined, asphalt streets, modern buildings and luxurious hotels, wrapped in the rich vegetation of their gardens. The stern architecture of the old town is in marked contrast with the mildness of the Mediterranean climate, the verdure of the parks, the blue sea rippling along the quays of the little port, and the comfort of the Calitea Baths and the new buildings.
The imposing walls date back to the XIVth and XVth centuries, the times of the Knights of St. John, later called Knights of Malta. Other spots of interest for the visitor are the monumental gates of Amboise, St. Athanasius and the Marine gate; the hostel of the Knights of St. John now transformed into an invaluable archeological museum; the so called hostels of Alvernia, of the Language of Italy and that of France; the palace of the Castellania, now called House of Dante. With their harmonious fusion of bizantine, neo-ellenic, romanic and Italian Renaissance architecture, they recall all periods of the colorful history of the beautiful island.

A well laid-out network of roads, 400 km. in extent, facilitates pleasant excursions to all parts of the island, where castles, monasteries, archeological remains, enchanting views and the picturesque village of Lindo form a series of delightful attractions with their background of olive woods, vineyards and orchards.

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SASENO. This is a mountainous islet, 4700 meters long and 2000 m. wide, near the Albanian coast neighbouring Valona. The surrounding sea teems with fish, and fishermen from Puglia make their living there. The islet is of outstanding military importance; its little garrison of sailors watches over the Channel of Otranto, the entrance and exit of the Adriatic.

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GOVERNMENT OF ERITREA

HISTORY. The conquest of Eritrea may be said to have begun in 1869, when the Rubattino Company purchased the territory of Assab; in succeeding years it was followed by the gradual occupation of Massaua and the hinterland, which brought about a lengthy war with Abissinia, lasting from 1885 to 1896, during which the bravery of the Italian soldiers stood out in adverse circumstances. The Italian people shall never forget the names of Toselli, Galliano and many other heroes of that campaign. After the last colonial campaign, and the fall of the Abissinian Empire, Eritrea finally obtained her natural boundaries with the inclusion of Tigrai and Dankalia. The Government of Eritrea has a surface of 220,000 sq. km., equivalent to about two thirds the area of Italy, and one million inhabitants, partly Hamitic, partly negroid, most of whom are employed in breeding livestock and agriculture.

THE SEA-COAST. Most of the coasts are arid. Across from Massaua lie the low, squat, rocky, coral islands of Dahlak, with little vegetation and few inhabitants. Their waters abound in pearls, sharks and turtles.

ASPECT OF THE COUNTRY. There are two distinct portions: the Eritrea-Tigrai plateau and Dankalia.

The **Eritrea-Tigrai Plateau** is the northern portion of the Ethiopian plateau. It rises rather steeply from the torrid lowlands of the Red Sea, attaining and surpassing the height of 2000 metres above sea level; towards the west it gradually slopes down into the hot valley of the Barca, while to the south it continues in its high altitude and mountainous character. To the north the rivers are of very slight importance; to the south instead they swell during the summer rains, and carry a great volume of water. The main streams are Tacazze, which takes the name of Setit towards the boundary, and the Mareb, further on called the Gash. On the lowlands the vegetation is typical of desert and steppe country; on the highlands there are sparse trees, euphorbias, sicamores, acacias and scrub. Along the watercourses there are frequent thickets of Dum palms.
Dankalia is an almost totally arid waste. It is a succession of desolate plains, white with chalk or black with lava, covered by a salty crust, or sandy and pebbly, divided by basalt cliffs, fearsome gullies, towering and bare mountains, with depressions exceeding in depth 100 meters below sea-level, vast, salty lakes, numerous volcanoes, some of which still active, hot springs and exceedingly rare and meagre oasis of date-palms and tough grass on which the camels feed. In the southern portion of Aussa, where the river Awash vanishes in the plain, there is a fair amount of grassy vegetation.

PRODUCE. The most suitable ground for **agriculture** is on the plateau where the climate is temperate and healthful, with warm summers and mild winters. Besides the production of cereals, vegetables and oil seed sufficient to the requirements of the native population there are coffee plantations on the slopes of the highlands overlooking the Red Sea and cotton plantations on the Tessenei plain, near the Sudan frontier, irrigated by a dam on the Gash river. The harvest of Dum palm nuts used for the manufacture of buttons also deserves mention.

The principal resource of the country is sheep, cattle, and camel breeding. Skins and shark fins are cured and exported. Minerals include gold mined at Cheren, the plentiful salt of Massaua and Assab and the salt plains of Dankalia, where there are also large quantities of potash. Moreover there is iron and lead near Adì Caièh, copper in Tigrai and petrol, of which at present only the presence in several localities has been ascertained.

COMMUNICATIONS include numerous motor and caravan roads and a railroad, 350 km. in length, leading from the port of Massaua to Asmara and thence, through Cheren and Agordat, to the lowlands on the other side. It will shortly be extended as far as Tessenei and Om Ager on the Setit river. A recently installed cableway supplements the Asmara-Massaua railway. The port of Massaua is at present the best equipped in the Red Sea.

PRINCIPALS CENTRES. **Asmara,** the capital, with a population of 50.000, is situated in a healthy hollow on the plateau, over 2300 meters above sea-level. It is furnished with all modern conveniences and is an important road junction **Massaua,** a modern city, built on small coral islands, with an excellent port, is the principal outlet for the trade of the highlands. The climate of Massaua is torrid Other centres of a certain importance are **Cheren, Agordat, Assab** in Eritrea proper, **Adua, Axum,** and **Macallè** in Tigrai.

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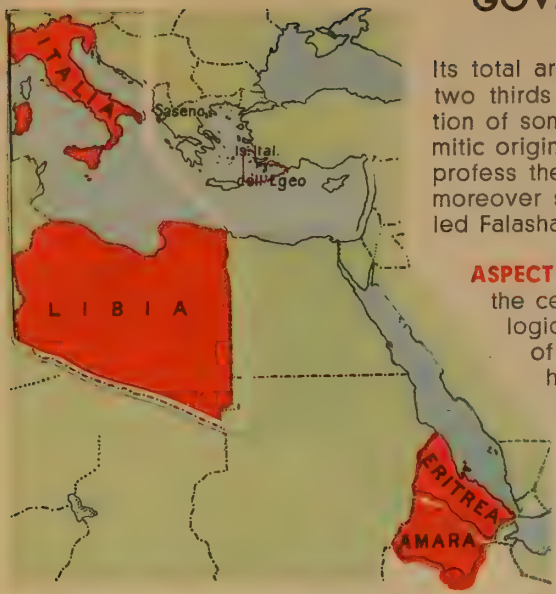
ENRICO E. ORTELLI - GENOVA

GOVERNMENT OF AMARA



Its total area is about 220,000 sq. km., roughly two thirds the surface of Italy, with a population of some 2 million souls of prevalently Hamitic origin, who speak the Amharic tongue and profess the Coptic christian religion. There are moreover some ancient tribes of Hebrews called Falasha and of Sudanese negroid idolaters.

ASPECT OF THE COUNTRY. Amara lies at the centre of the Ethiopian highlands; geologically, the plateau rises on a basement of ancient rock, on which there are heavy strata of limestone of a later date and volcanic rocks flattened and warped into many shapes by the rains. The hardest blocks which have best resisted erosion form the bastions called Ambas with a more or less flattened top, which are the principal characteristic of the landscape. The less resistant strata have been deeply excavated by watercourses, which consequently flow down deep valleys amid steep wooded slopes. The best-known mountains of this section of the highlands are the Abuna Josef, 4200 metres in height, where the waters of the Tacazzè have their source; Ras Dasciàn, 4600 metres in height, the highest peak, equal in altitude to Mt. Rosa, and the Ciocchè, 4150 m. in height, to the south of lake Tana, which compels the Abbai to make a long detour before flowing into the Nile.

LAKE TANA. Is nearly circular in shape with a varying diameter of 60 to 70 km. and a surface about eight times as great as that of Lake Garda. It lies at an altitude of 1760 metres above sea-level and is only 100 metres deep. It teems with fish and hippopotami: crocodiles, so common on the Abbai, the Tacazzè and other rivers, are instead absent. There are about fifty islands on the lake, most of them owned by religious communities; also in many of the villages along its shores there are monks and sanctuaries. The shores are low and overgrown with reeds with which the natives build frail vessels on which they go fishing and travel on the lake. Concerning the influence of lake Tana on the Nile, it may be said to be negligible. As a matter of fact the average yearly capacity of the Abbai at the outlet of the lake is only about 100 cubic m., while the volume of the Blue Nile at its entry into the Nile near Khartum is about 2000 cubic m. This means that the Nile owes its tributary volume to the waters of all the western section of the Ethiopian plateau rather than to lake Tana.

CLIMATE. In the lowlands or « collà », the temperature is high and the vegetation bushy; at a medium altitude, ranging between 1700 and 2700 metres above sea-level or « voina degà », the temperature is mild and suitable for agriculture; on the highlands above 2700 metres, or « degà », where the temperature is cooler, meadows and pastures are plentiful. The rains are generally copious and fall in the summer semester.

PRODUCE. The abundance of rains and watercourses and the general fruitfulness of the soil, especially in the neighbourhood of lake Tana, render this region especially suitable for the cultivation of cereals, cotton, coffee, castor and other oil plants, and therefore available for Italian colonization. Livestock is also plentiful. Layers of coal, lignite and iron are to be found to the northwest of Gondar, and gold ores in the Ciocchè range. Of still greater importance are the rich iron ores of Ancober, to the north-east of Addis Abeba.

MAIN CENTRES. **Gondar,** famous for its ruins of castles and churches; **Debra Tabor,** also called **Samarà; Dessié** situated on the edge of the plateau; **Debra Marcos,** which takes its name from the convent (debra) of St. Mark.

Government of Addis-Abeba

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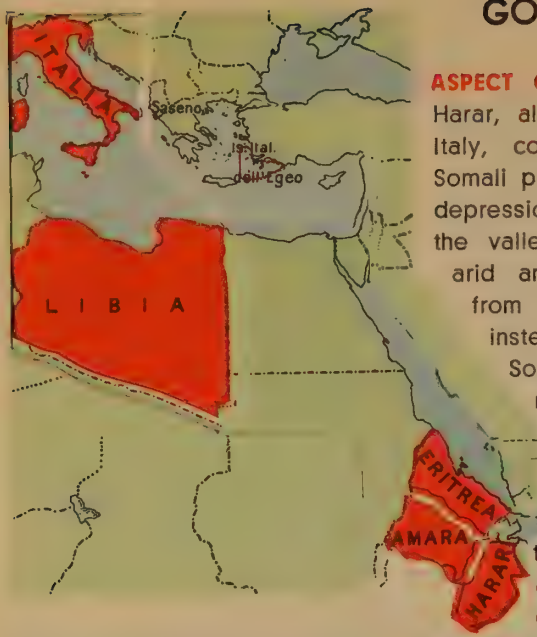
It includes the capital and the surrounding territory for a radius of about 50 km., having a population of about 300,000 inhabitants.

THE CITY of Addis Abeba, meaning « new flower » was built in 1896 when Menelik, on request of his wife Taitù, moved the capital there from the neighbouring Entotto. Although it lies at only 9 degrees from the equator, it enjoys a mild and healthy climate, thanks to its considerable height above sea-level. The geographic position is excellent as it overlooks the depression between the Abyssinian and the Somali plateaus. Moreover the Gibuti railway gives easy access to the sea. The city, numbering about 100,000 inhabitants, is spread over an extremely vast area, subdivided by the beds of a number of torrents into many separate quarters, enjoying the shadow of extensive eucalyptus plantations. The best part of the city is where the imperial residence or Ghebbì, now occupied by the Vice-Roy, towers among the trees; near there are also the residences of Europeans, places of public entertainment, stores, offices etc. The market, especially crowded on Saturdays, is a picturesque sight: all kinds of native produce and foreign goods are sold there. The Abuna or bishop, chief of the Christian Coptic religion, also resides in the capital. The city is being improved rapidly under the vigorous, constructive impulse of the Fascist Government.

ENRICO E. ORTELLI - GENOVA

GOVERNMENT OF HARAR



ASPECT OF THE COUNTRY. The territory of Harar, almost equal in size to two thirds of Italy, consists of the central mountainous Somali plateau, sloping very steeply into the depression formed by the Galla lakes, of the valley of the Auash and of the rather arid and undulated rocky plain extending from Aussa to Dankalia. To the south instead the plateau slopes gently towards Somaliland and is threaded by innumerable tributaries of the Giuba and Uebi Scebeli rivers

CLIMATE. The rains are not so plentiful as on the Ethiopian plateau, yet they are sufficient, amounting to about 100 cm. yearly in the higher districts. The climate varies according to the altitude; above 2000 meters it is temperate, elsewhere it is hot. The vegetation is luxuriant on the highlands, rather poor on the lowlands.

POPULATION. The greater part of the population (1,400,000) are Gallas. Like the Abyssinians the Gallas are of Hamitic origin, intermingled with other inferior races. Their physical and intellectual characteristics are inferior to those of the Abyssinians. On the other hand the Gallas of the highlands are excellent farmers, which cannot be said of most Abyssinians who until recently were exclusively engaged in warfare and in cattle-breeding. The religion of most of the population is that of Mahomet.

VEGETABLE PRODUCE. Agricultural land is plentiful and the presence of numerous perennial watercourses will make it possible to reap considerable harvests in this region in future. At present most arable land is near Harar. The produce is: cereals, coffee similar in strength and aroma to that of Arabia, tobacco, oil seeds, etc. Both in Harar and the more westerly region of Caffa, said to be the country from which coffee originally spread to Arabia and the rest of the world, the beans of the coffee plant which fall to the ground when they are ripe are eaten by the natives; the best are plucked from the plant and exported. Among the native products of the Harar bush there is the leaf of a shrub which on being chewed produces an exciting effect like coffee, bolivian coca and the cola of Guinea. The general use and abuse of this stimulant causes frequent cases of lunacy among the population.

ANIMAL PRODUCTS. Sheep, goats, camels and oxen are bred in great numbers, and apiculture is also widespread. Apiculture, as a matter of fact, is common throughout Ethiopia and though the wax is exported, the honey is largely consumed

locally in the concoction of an alcoholic drink of fermented honey and water called hydromele: this and a kind of beer brewed by the natives, are the national drinks of the Ethiopians. The rudimental apiaries built by the natives and suspended to plants around the villages are a characteristic peculiarity of the Abyssinian countryside.

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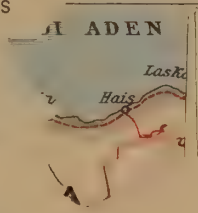
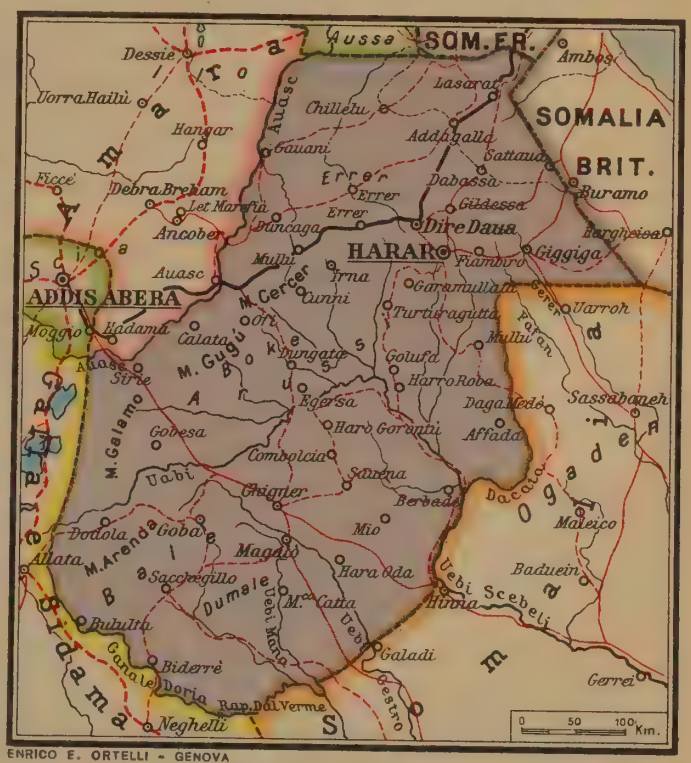
MINERAL PRODUCTS. It is reported that in the section of the depression to the north of Harar, neighbouring Gildessa and Giggiga, there are vast oil fields. There are many signs of oil in this region, in Dankalia and on the Dalhac islands across from Massaua, besides other parts along the Red Sea; but accurate research is at present being made to determine quantity and the desirability of extraction.



PRINCIPAL CENTRES. **Harar,** the principal town in the region, almost 2000 metres above sea-level, surrounded by fertile agricoltural land, with a population of 50,000 inhabitants, has the appearance of a city for it possesses houses built of masonry, a few squares, several mosques, some European residences. They give a note of grace and civilization to this town which is bound to develop and improve in the future. It is bounded by walls with five gates for five different roads leading in various directions.

Other important centres are **Dire Daua,** a smart little town on the Gibuti-Addis Abeba railway, and **Giggiga,** on the caravan route to the ports of Zeila and Berbera in British Somaliland.



ENRICO E. ORTELLI - GENOVA

GOVERNMENT OF THE GALLA AND SIDAMA

ASPECT OF THE COUNTRY. The territory of the Galla and Sidama, an area greater than that of Italy, includes the southern part of the Ethiopian plateau and the great depression in which the Galla lakes are imbedded. The plateau is strewn with great mountain ranges, compelling the watercourses to make complicate detours. In fact some of the streams flow towards the north into the Abbai or Blue Nile; others join the Bar and Sobat rivers and flow towards the west into the White Nile, others still join the Omo Bottego and flow into lake Rudolph. The depression between the two plateaus of Ethiopia and Somaliland contains many lakes such as the Zuai, the Sciala, the Margherita, the Ciamo, the Stefania and part of lake Rudolph. They are closed lakes and have no emissary leading to the sea. Some of them are brackish others not.

CLIMATE AND VEGETATION. Of all the regions of eastern Africa, the one we are now dealing with most nearly attains the intense damp heat common in equatorial countries. Except on high mountains, the heat is everywhere extreme and summer rains are very plentiful, from 120 to 200 centimetres. The vegetation is luxuriant: thickets and forest of tamarind, sicamore, giant junipers, dum palms, bamboos, grow in remarkably fertile soil, where the coffee plant also grows wild. Big game is represented by elephants, hippopotami, crocodiles, lions, leopards, hyenas, giraffes, buffalo, zebras, ostriches, etc.

POPULATION. The inhabitants, amounting to about 1,600,000, are Galla, Sidama, Borana and other tribes of distant Hamitic origin, with whom many Sudanese negroid elements have intermingled, especially along the Anglo-Egyptian Sudan boundary. Among these poor pagans who supplied slaves to their Abyssinian overlords for many centuries, the charitable work of the Missionaries finds scope for its activity.

VEGETABLE PRODUCE. The agricultural possibilities of this region are great on account of the fertility of the land and the copious rains. The primitive methods with which the natives at present farm the neighbourhood of their villages are sufficient to show that cotton and coffee may be cultivated with great profit. Aloes, tamerisk, cassia, sena, and hardwood are products of the forests.

ANIMAL PRODUCE. Although epidemic sickness and the tze-tze fly are present in many places, cattle are bred in great numbers. Ivory, feathers, ornamental furs and other articles are supplied by huntsmen; they are the medium of exchange of the rudimental local trade.

MINERAL PRODUCTS. The region of Uollega, to the west of Addis Abeba towards the Sudanese border, where the basic rocks of the Ethiopian plateau come to the surface, is very rich in precious minerals, especially in the valley of the Birbir, an affluent of the Baro river, and the valley of the Didessa, a tributary of the Abbai. The existence of gold reefs and sand containing gold dust has been known since ancient times; there are layers of platinum at Jubbo, and there may also be diamonds.

PRINCIPAL CENTRES. **Gimma,** headquarters of the Government, situated in the heart of the country; **Gambela** on the Baro river; **Gore,** on the Gambela-Addis Abeba motor road.

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ENRICO E. ORTELLI - GENOVA

GOVERNMENT OF ITALIAN SOMALILAND

HISTORY. The acquisition of Somaliland was slower, but cost less trouble than that of Eritrea. In 1885, having stipulated an agreement with the Sultan of Zanzibar, Italy was empowered to exercise her influence on the Somali coast. In 1889 the Sultans of Obbia and the Mijurtines accepted an Italian protectorate over their territory. Successive agreements with England allowed Italy to extend her dominion on the country, a privilege enforced only after the advent of Fascism, when the Quadrumvir count De Vecchi di Val Cismon energetically rid the colony of the two sultans who were working underhand against Italy.

ASPECT OF THE COUNTRY. Somaliland has a surface of 700,000 sq. km. an area two and a quarter times greater than that of Italy. To the north the coasts are high and rocky, to the south they are low, sandy and straight, bounded by a coral reef that makes landing difficult, especially in summer when the monsoon blows violently. The land is mostly flat, threaded by two great rivers, the Giuba and the Uebi Scebeli, the banks of which are fertile and suitable for colonization. The climate is very hot, damper towards the coast and drier in the interior. The very scarce rains, from 30 to 40 cm., fall in spring and autumn.

POPULATION. The 1,300,000 inhabitants of Somaliland are of Hamitic origin and Mohammeddan religion; most of them are nomads engaged in breeding cattle, of which there is a large quantity in the colony.

AGRICULTURAL COLONIZATION. In Somaliland there are two great colonial enterprises. The first, the Italo-Somali Agricultural Society or S. A. I. S., founded by H. R. H. the late Duke of Abruzzi, lies on the banks of the Uebi Scebeli, to the north of Mogadiscio. 6000 workers, living in sixteen villages are employed in the cultivation of cotton, sugarcane, cereals, manioca, bananas, agave, capoc and other crops, out of which alcohol, cotton oil and other vegetable oils are extracted with modern methods. Cattle are also raised in large numbers. The Government esta-

blished a still larger center for colonization, by initiative of Count De Vecchi, between Genale and Vittorio d'Africa, in the neighbourhood of Merca, where bananas, cotton, coconuts and so forth are produced on about one hundred farms. The plantations are directed by Italians, who oversee the work of the natives.

MINERALS. For the present the only known mineral of importance is salt, produced in the vast salines of Cape Hafun near Dante in northern Somaliland. A cableway 24 km. long allows the salt to be directly loaded on board ship.

PRINCIPAL CENTRES. **Mogadiscio,** the seat of the Government with 40,000 inhabitants, is a pretty little city from which a railway leads to the Duke of Abruzzi village, to **Merca, Brava, Chisimaio,** on the shores of the ocean, and to **Baidoa, Lugh Ferrandi, Dolo, Rocca Littorio.**

ENRICO E. ORTELLI - GENOVA

ITALY'S PLACE IN THE SUN...

Surface and population of Italy's colonial Empire

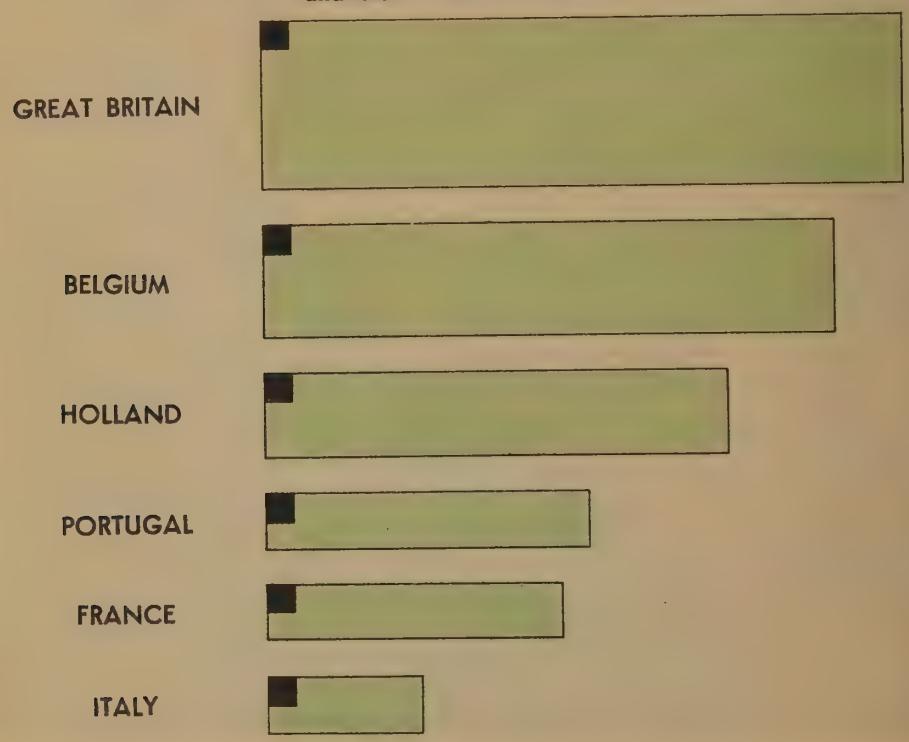
	Area in sq. km.	inhabit.
Libia	1.850.000,0	700.000
Italian Oriental Africa	1.708.000,0	7.600.000
Islands of the Aegean	2.700,0	135.000
Saseno	9,5	500
Tientsin Concession	0,5	6.300
	3.560.710,0	8.441.800

...AND THAT OF OTHERS

Surface and population of the Colonial Empires of the main states of Europe

	Area in sq. km.	inhabit.
Great Britain	33.550.000	455.000.000
France	11.650.000	63.000.000
Holland	2.030.000	63.000.000
Belgium	2.440.000	12.000.000
Portugal	2.090.000	10.500.000

Ratio between the surface of the principal Colonial powers and that of their Colonies



CONQUEST OF THE ETHIOPIAN EMPIRE

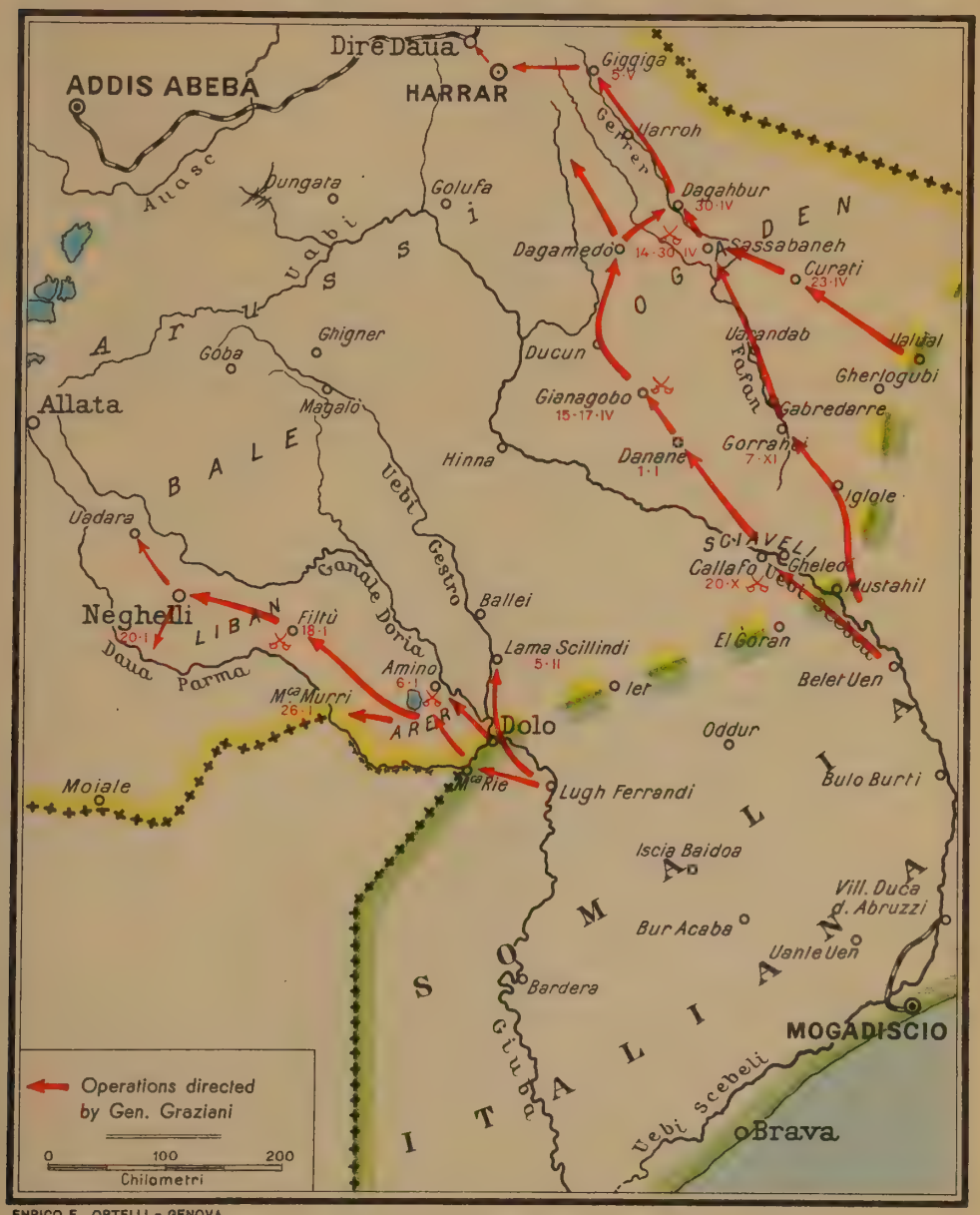
HISTORICAL SUMMARY

ETHIOPIA IN THE PAST. The origin of the Ethiopian State is lost in the mists of the past. It certainly must have existed at the time of the Pharaos of Egypt, for frequent mention is made of it. Its ancient inhabitants were related to the Egyptians, and were thus of a white race, of Hamitic origin, variously intermingled with the negroes. From Egypt Christianity brought its light to Ethiopia, principally through the missionary zeal of saint Frumentius, who lived in the IVth Century A. D. Most Ethiopian Christians are Copts believing in Christ's divine nature alone, and the majority of the others are Moslems. The Middle Age legend of Prester John in supposed by many to have been connected with a Negus of Abyssinia. In the XVIth century the country was invaded by the Portuguese but revolts and internal wars continued. In the last century, the throne was ascended by Theodore, whose policy consisted in giving Ethiopia a united administration, preventing civil strife and foreign incursions. But the boldness of his attempt to establish order in the country, made him so many enemies and provoked so great an opposition, that he resorted to cruelty. Certain acts of violence committed against the British caused Lord Napier's expedition of 1867-68, whereby Theodore was put to flight, after which he committed suicide. After much strife among the Chiefs, John Cassa succeeded him, and during his reign Italy occupied Assab and Massaua. After the Negus fell in a battle against the Mahdists, Menelik II was raised to the throne, and under his rule the Ethiopian government undertook a series of wars to subdue all the highlands. He tried in vain to carry out his program of eliminating Italy from East Africa; he also failed to free the country from slavery and to raise it to the standard of a civilized nation. The Ethiopian community, remained, until the downfall of the Empire, a hybrid mixture of races, tribes, religions, without any unity or homogeneity, with a prevalently feudal organization, where a few despots exploited the population, where peace could never be ensured, and loot, assassination and raids were everyday occurrences.

ITALY IN EAST AFRICA. Italy's colonial policy began in 1879, with the occupation of the Bay of Assab on the Red Sea and of the port of Massaua six years later. In 1887, under the premiership of Francesco Crispi, Italy started expanding on the Ethiopian highlands, with the result that ten years later Italy had obtained a protectorate over the whole region. In the years 1893, '94 and '95 general Barattieri won several battles; the Dervishes were beaten and Kassala was taken at the same time. But in December 1895, after having started offensive operations against them, Menelik compelled the Italians, after a heroic resistance and the fall of major Toselli, to retreat from Amba Alagi on positions further back; later the fort of Macallè, heroically defended by major Galliano, had to be evacuated, and after a desperate battle in the Adua velley on the first of March 1896, the Italian expeditionary force was overpowered by the enemy hordes ten times their number.
The vacillating policy of the Government prevented General Baldissera, sent in General Barattieri's place, from avenging the glorious fallen. A part of Tigrai, which had been formerly occupied, was left to the enemy; Abyssinia's independance was recognized and the treaty of Uccialli by which the country had been placed under the Italian protectorate in 1889 was annulled, while Kassala was handed over to the British.
Italy however partly made up for her loss by expansion in Somaliland, a land especially fertile along the Juba and Uebi Scebeli rivers, and most of her colonial activity began to be carried out in that region.
But owing to her primitive organization, Ethiopia was bound to lose her independence sooner or later. She accordingly became the object of attentions on the part of England and France. Until the cunning Menelik lived, Ethiopia succeded in

holding her own; but after his death, the misery and disorder of the country appeared clear to all, so that a cutthroat competition between the interested powers began, with the object of influencing the policy and economy of the country. Since each power suspected its neighbour, to ward off a possible invasion,slave-dealing Abyssinia was finally allowed to enter the League of Nations. On the assumption to the throne of Ras Tafari, who in 1930 took the name of Hailè Sellasiè, it soon appeared that the country was open to French and British penetration and closed to Italy. The policy of the Negus was directed against Italy, with the object of eliminating her from Eritrea and Somaliland. Provocations, violence, attacks against Italian subjects were frequent, compelling the Fascist government to take immediate and energetic steps for the protection of Italian possessions.

THE ITALO-ABYSSINIAN WAR. What would have happened to the Colony of Eritrea and Somaliland, if Abyssinia had fallen into the hands of a strong Power or if, to prevent Italy, who had greater interests there than any other country, from subduing her, she had been given the means of attacking? In answer to this query the Duce took measures necessary to safeguard the Italian Colonies.
The attitude of the Ethiopian government was becoming ever more threatening and this was confirmed by a traitorous aggression at the Gondar consulate in Nov. 1934 and a month after by an attack on the Italian outpost at Ual-Ual. Evidently, in giving such provocation to Italy, the Negus felt well protected. Then General Emilio De Bono was nominated High Commissioner for East Africa, and Marshal Rodolfo Graziani was dispatched to Mogadiscio as military commander of Somaliland; soldiers, workmen and war material were sent at the same time to be ready for any event.



ENRICO E. ORTELLI - GENOVA

England showed her hostility to Italy, fearing that, in the event of an Italo-Abyssinian war, Italy might found a powerful Empire on the shores of the Red Sea, threatening the route to India and bringing her influence to bear on the critical situation in Egypt. Thus, by exercising all her influence in the League of Nations, to which Ethiopia belonged, she caused Italy to be declared the "Aggressor" state, so that economic sanctions were applied against her, beginning with Nov. 18, 1935. But the soldiers and blackshirts of Italy had already, on October 2nd, crossed the boundary and begun their first step forwards in the conquest of an Empire.

The formidable echo of the Duce's words reached them, when in the solemn Assembly of the same date he appealed to all Italians to fight and resist all external pressure. Overcoming a thousand difficulties, dispersing the enemy, with the firm convinction of fighting for a greater and more powerful Fatherland, they proceeded from victory to victory. To economic sanctions the Italian people replied with a most steady resistence and with counter-sanctions. Offers of gold to support the struggle came from all sides and, following the august example of the Queen, all the women of Italy gave their wedding-rings to be melted for the Fatherland.

With the first operations general De Bono advanced into the Tigrai, occupying Adua and Macallè, while General Graziani took possession of Dolo and victoriously proceeded up the Daua Parma.

Having assumed the supreme command of the forces operating in East Africa, General Pietro Badoglio developed an extremely bold plan, carefully prepared, taking into account a most important element, that is the overpowering tactics of the enemy and his lack of ability in guerrilla warfare. To win it was necessary to defeat those tactics which had proved successful at Adua in 1896; this was obtained in a thousand different ways, above all by preceding and accompanying the advance of the troops by repeated air attacks, with the object of dispersing, discouraging and harassing the enemy. The result fully justified the expectations. In five battles, which were an equivalent number of victories, Marshal Badoglio annihilated the proud Abyssinian army. In January 1936 the enemy was defeated in the first battle of the Tembien or Tacazzè, and he was again beaten in the first days of Feb. at the Amba Aradam or Endertà, followed by the occupation of Amba Alagi. The two victories uncovered the Italian right flank to the enemy armies of Tembien and Sciré. But at the end of February these were defeated one after the other, following an astonishingly able enveloping movement, so that the way to the interior of Ethiopia was open to the Italian troops. Nor did it avail the Negus to make an effort to stop the Italian advance in person, for he too was defeated on March 31st at Lake Asciangi. On April 1st, the Secretary of the Fascist Party, Hon. Starace, occupied Gondar, the capital of Amara, and on the 12th the tricolor was hoisted on the shores of Lake Tana. On the 11th the Italians gained Dessiè and thence, without meeting any resistance, proceeded to Addis Abeba, the capital, which they entered on May 5th.

In the meantime, general Graziani, having occupied Neghelli by an incredibly fast forward thrust, overcame the enemy's resistence in all sectors of Somaliland and marched on Harar, after having taken possession of Gorrahei, Sassabaneh and Giggiga. The chaotic Ethiopian State thus ceased to exist, and during a solemn mass meeting on May 9th 1936, the Duce was enabled to announce to the Fatherland and the world that Italy had annexed Ethiopia and founded an Empire.

The overwhelming victory, avenging the legionaries of Africa and the heroism of the fallen, thus gave the lie to all the falsehoods with which the foreign press had for several months fed public opinion, and at the same time brought to an end the unjust economic siege by which the League had attempted to choke Italy. The Assembly at Geneva, not wishing to recognize the defeat of its policy, received the dethroned Tafari in its midst and bewailed his fate. Great Britain in the mean while little by little withdrew from the Mediterranean her Home Fleet, sent into that sea to intimidate Italy. The latter triumphed, notwithstanding all snares and all hostile coalitions; and the Duce was saluted by a rejoicing people as the founder of an Empire.

The numbers marked in the small page refer to the government of Addis Abeba and to the Commissariats which it was not possible to mention for want of space.

1 Government of Addis Abeba
2 Commissariat of Hamasien
3 » of the Eastern lowlands
4 » of Seraé
5 » Acchele Guzai
6 Commissariat of Adigrat
7 » of the Tembien
8 » of Macallé
9 » of Guraghé and Gambattà
10 » of Mogadiscio

ENRICO E. ORTELLI - GENOVA

Political-administrative divisions of Italian East Africa

CITY GOVERNMENT OF ADDIS ABEBA		headdquarters	ADDIS ABEBA
GOVERNMENT OF ERITREA		- " "	ASMARA
Commissariat	of Cheren	- " "	Cheren
"	of Bassopiano Occidentale	- " "	Agordat
"	of Hamasien	- " "	Asmara
"	of Bassopiano Orientale	- " "	Massaua
"	of Seraè	- " "	Adi Ugri
"	of Acchele - Guzai	- " "	Adi Caieh
"	of Adua	- " "	Adua
"	of Adigrat	- " "	Adigrat
"	of Tembien	- " "	Abbi Addi
"	of Macallè	- " "	Macallè
"	of Dancalia	- " "	Assab
"	of Alomatà	- " "	Alomatà
GOVERNMENT OF AMARA		headdquarters	GONDAR
Commissariat	of Semien	- " "	Debarech
"	of Gondar	- " "	Gondar
"	of Beghemeder	- " "	Debra Tabor
"	of Goggiam	- " "	Debra Marcos
"	of Uollo	- " "	Dessiè
"	of Debra Breham	- " "	Debra Brehan
GOVERNMENT OF GALLA AND SIDAMA			
Commissariat	of Baro and Iabus	-headdquarters	GIMMA
"	of Uoltega and Gudru	- " "	Lechemti
"	of Guraghè and Gambattà	- " "	Silti
"	of Gore	- " "	Gore
"	of Gimma	- " "	Gimma
"	of Caffa and Ghimirra	- " "	Anderaccia
"	of Ometo	- " "	Soddo
"	of Sidamo	- " "	Irgalem
"	of Magi and Sciuro	- " "	Magi
"	of Baco	- " "	Baco
"	of Ciamò	- " "	Gardulla
"	of Borana	- " "	Iavello
GOVERNMENT OF HARAR		headdquarters	HARAR
Commissariat	of Dire Daua	- " "	Dire Daua
"	of Giggiga	- " "	Giggiga
"	of Cercer	- " "	Asba Littoria
"	of Harar	- " "	Harar
"	of Arussi	- " "	Tiggiò
"	of Ghigner	- " "	Ghigner
"	of Goba	- " "	Goba
GOVERNMENT OF SOMALIA		headdquarters	MOGADISCIO
Commissariat	of Migiurtinia	- " "	Gardò
"	of Ogaden	- " "	Gabredarre
"	of Mudugh	- " "	Rocca Littorio
"	of Uebi Gestro	- " "	Dolo
"	of Alto Scebeli	- " "	Bulo Burti
"	of Alto Giuba	- " "	Iscia Baidoa
"	of Basso Giuba	- " "	Chisimaio
"	of Basso Scebeli	- " "	Merca
"	of Mogadiscio	- " "	Mogadiscio

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Figure 55. View at Hadrian's Villa near Rome.

Figure 56. View from Hadrian's Villa.

Figure 57. A view of ruins at Hadrian's Villa. Note the method of laying the brick, developed by the Emperor Hadrian.

Figure 58. Servant's corridor at Hadrian's Villa

Figure 59. At Hadrian's Villa.

Figure 60. View at Villa D'Este, near Rome.

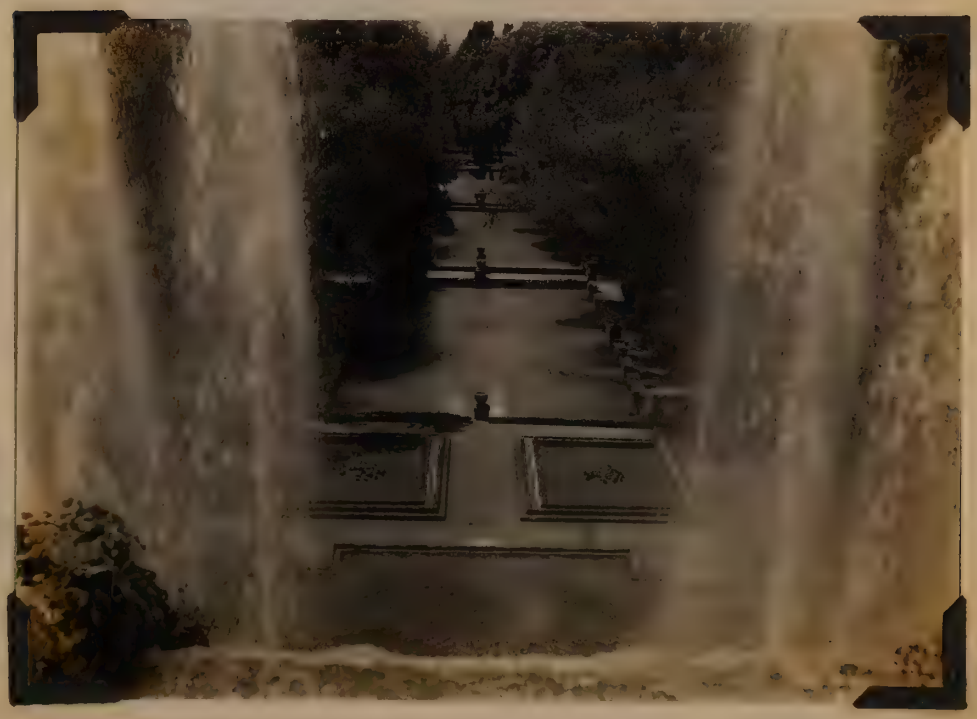


Figure 61. View through fountains at Villa D'Este.

Figure 62. Etruscan tombs, near Rome.

Figure 63. Inside of Etruscan tomb.

Coperto L. 15

Lista del 30 Maggio 1936

Percentuale di servizio 12 %

ANTIPASTI: servizio a tavola s. q. — Ostriche 1/2 dozz. L. — - Taratufoli 1/2 dozz. L. — - Cozze —

MINESTRE IN BRODO

Cappelletti 7.50
Asparagi mio 3.50
Riso - tonno - sardine 3.00
Carciofini - funghi 4.00
Pastina e burro 10.00
Burro 1.20 / dott. aceti 1.20

PASTE ASCIUTTE

Quadrucci in brodo 1.70
Capellini 1.80
Stracciatella 2.00
Consumato speciale 2.00
Sera = Tortellini in consumato 2.50

BOLLITI

Lombata al sale 2.00
Spezzatino alla romana 3.50
Pizza alla napoletana 2.50
Sera = Tortellini alla Valle 3.50

PESCE

Aragosta 5.—
Sogliole 3.—

PIATTI DEL GIORNO

PIATTI PRONTI

Gallina bollita [redacted] petto 7.50
Arrosticino di vitella alla romana 7.00
Pietta con verdura 4.00 Fritto mozzarella e carciofi 4.50
Crocchette di pollo e zucchine 4.50
Uccelletti di campagna 6.50
Lombata di manzo alla Roast. Braten 7.00

PIATTI ESPRESSI

Sera = 1/4 Pollardina toscana in casseruola e patatine fine [illegible]
Trancia di chubrina alla maggiordomo 8.50
Frittura piccata 6.00 Asparagi giardino con (1) uova 6.50
Scaloppe alla Morgainy 7.50
Medaglione di filetto ai sortilegi 5.00
Crocchette di pollo e piselli 5.00 Lombata vitella al burro 7.50

PIATTI FREDDI

Galantina di cappone e gelatina 7.00
Roast. Beef e insalatina 6.50
Lingua e prosciutto e gelatina 5.50
Piatto di carne assortita e gelatina 6.50

PRIMIZIE

Asparagi di giardino 4.00 alla parmigiana 4.50
Fave al guanciale 3.50
Insalata di cetriolini e pomodori 4.50
Sera = Piselli al prosciutto 4.50 guarnizione 1.50

VERDURE

Fagiolini 3.50 Zucchine 3.00
Carote rosse 3.00
Insalata verde 1.50
" composta 3.50
" alla capricciosa 2.50
" alla capricciosa con pomodoro 3.50

DOLCI

Torta al frutto 3.00
Crema al caramello 2.50
Sera =
Bomba Valle 3.50
Diplomatico 3.50

FORMAGGI

Assortiti 2.00
Servizio a consumo s. q.

FRUTTA

Fragole alla panna 4.00
Banana 1.50 Arancia 1.50
Mela 1.50 Ciliege 1.50
Ananas al maraschino 4.50
Arancia - banana al maraschino 5.—
Macedonia al maraschino 5.—
Composta di pesche 2.50

CAFFÈ L. 1

Per i Vini e i Liquori chiedere il listino.

Pranzo a prezzo fisso L. 10.— 11.50 (minestra, piatto guarnito, formaggio, frutta, vino 1/4, servizio compreso). I piatti stabiliti per il prezzo fisso sono segnati con la sigla **P. F.**

SPECIALITÀ DELLA DITTA
VINO BIANCO MUSSANTE
" ACQUA DI TREVI „
SECCO O DOLCE

Un regalo gradito
una cassetta di vin
" Acqua di Trevi

DEL VINO " ACQUA DI TREVI „
È STATO DEPOSITATO NOME E MARCHI
ATTESTATO DI TRASCRIZIONE DI MARCHIO DEL
MINISTERO DELL'EC. NAZ. N. 36899 (18-2-1929 - VII)

ROME

Julius Caesar

ROME

To write of Rome, a city which is at the same time the origin and the life-blood of Western civilization and where every street, every square, every work of art and every stone embodies an epoch in history, is indeed a difficult undertaking.

But whether one writes in many volumes, or, as we intend to do, in a few pages, one must always remember that Rome is a marvellous and living reality that cannot be anatomized like a dead thing or being, otherwise the result will be a useless and sterile or commonplace work with a superficial succession of asterisks and points of exclamation.

One must think of Rome as a strong organism that has lived for centuries and has centuries yet to live; one must try to understand this city in the complexity of its many aspects, as one would any other living being.

The Capitol

Strictly speaking, there is no such thing as a Republican Rome, an Imperial Rome, and still less — as some scholars would have us believe — a Gothic Rome, a Byzantine Rome, or a Carolingian Rome; neither is there a Mediaeval Rome, a Renaissance Rome, a Baroque Rome, a Neo-Classic Rome, a Nineteenth-Century Rome, or a Rome Capital of Italy; there is but one Rome, and though for the sake of convenience we may classify certain topographical and monumental aspects of the city with certain periods, it must be considered as a living unity of unequalled historical importance. The most one can do is to distinguish the three principal moments of the mission which Destiny has assigned to Rome and speak of the Rome of the Caesars, of Papal Rome and of Lictorian Rome — the Capital of Italy.

artistic and historical treasures in the PALACES OF THE CAPITOLINE MUSEUM and THE CONSERVATORI and in the PALAZZO SENATORIO — the seat of the Governor of Rome — that limit the three sides of the Piazza del Campidoglio, in the centre of which stands the gilded equestrian statue of Marcus Aurelius.

After Sinai, the Tabor and the Calvary — on which altitudes the voice of God was

* * *

Let us begin from the **Capitol,** the centre and the heart of the town's life, the majesty of which Michael Angelo has expressed in terms of architecture, and which from the genius and love of Mussolini has received a new and still more solemn dignity.

There are a great number of

Equestrian statue of Marcus Aurelius

heard — the world knows no hills more sacred than the Vatican and the Capitoline.

And it is from the Capitoline Hill — which has witnessed the glory and travail of Rome since its origin — that one should look on the **Roman Forum** for the first time.

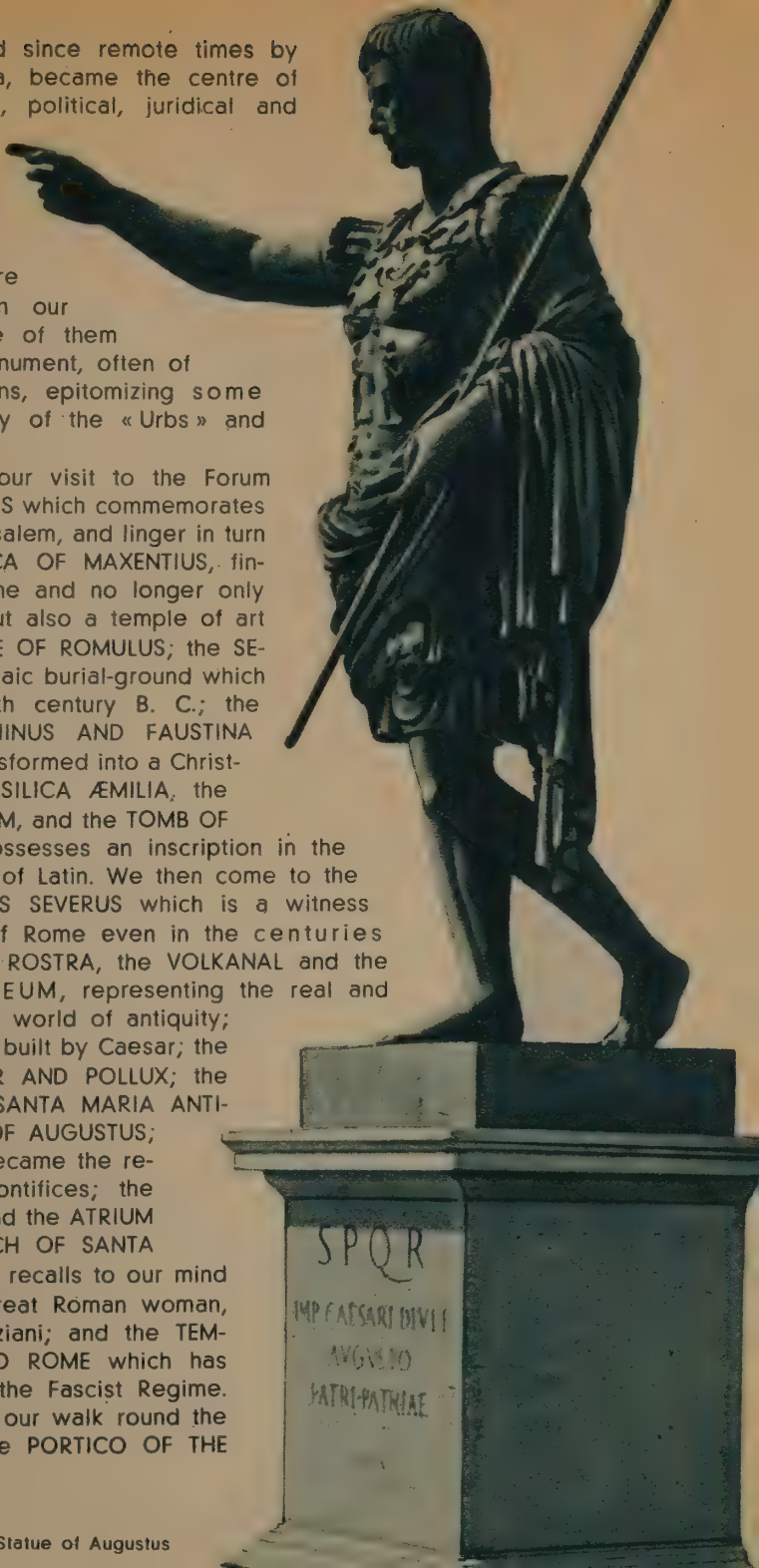
This small depression between the Quirinal, Viminal, Palatine and Capi-

Via dell'Impero seen from the Colosseum

toline hills, drained since remote times by the Cloaca Maxima, became the centre of public, commercial, political, juridical and religious life in Rome.

Remains embodying the history of over ten centuries are assembled beneath our eyes, every one of them evocative of a monument, often of imposing proportions, epitomizing some page in the history of the « Urbs » and of the world.

Let us begin our visit to the Forum at the ARCH OF TITUS which commemorates the capture of Jerusalem, and linger in turn before the BASILICA OF MAXENTIUS, finished by Constantine and no longer only a grandiose ruin but also a temple of art and life; the TEMPLE OF ROMULUS; the SEPULCRETUM, an archaic burial-ground which dates from the 9th century B. C.; the TEMPLE OF ANTONINUS AND FAUSTINA which has been transformed into a Christian church; the BASILICA ÆMILIA, the CURIA, the COMITIUM, and the TOMB OF ROMULUS which possesses an inscription in the oldest known form of Latin. We then come to the ARCH OF SEPTIMIUS SEVERUS which is a witness of the greatness of Rome even in the centuries of its decline; the ROSTRA, the VOLKANAL and the MILLIARIUM AUREUM, representing the real and ideal centre of the world of antiquity; the BASILICA JULIA, built by Caesar; the TEMPLE OF CASTOR AND POLLUX; the LACUS JUTURNAE; SANTA MARIA ANTIQUA; the TEMPLE OF AUGUSTUS; the REGIA, which became the residence of the Pontifices; the TEMPLE OF VESTA and the ATRIUM VESTAE; the CHURCH OF SANTA MARIA NOVA which recalls to our mind the glories of a great Roman woman, Francesca dei Ponziani; and the TEMPLE OF VENUS AND ROME which has been restored by the Fascist Regime. We can then finish our walk round the Forum, admiring the PORTICO OF THE



Statue of Augustus

DII CONSENTES, the TEMPLE OF VESPASIAN, the TEMPLE OF CONCORD, and the MAMERTINE PRISON where, according to tradition, St. Peter was imprisoned, and then the TABULARIUM, which was the Public Records Office of the Roman State. In all these monuments are consecrated ten centuries of glory unique in the history of the world, and on to which are grafted a further twenty centuries of inimitable greatness.

And we have not yet spoken of the marvels of the **Palatine Hill** which in ancient times consisted of three summits: the Palatium, the Germalus and the Velia.

This hill, sacred to humanity, was the site of the « Roma Quadrata ». During the Republic it was inhabited by rich patricians, and, after Augustus, it became the residence of the emperors, who gradually transformed it into a vast assembly of palaces, porticoes, temples and gardens of monumental grandiosity, analogous, in some ways, to the present-day Vatican. In the Middle Ages it became the dwelling-place of powerful barons, and in the sixteenth century the French transformed it into a magnificent garden.

Only to enumerate the list of the imposing remains to be found on the Palatine is an epopee of glorious names and events. The LUPERCAL where, according to legend, Romulus and Remus were nourished by the wolf; the TEMPLE OF JUPITER and the TEMPLE OF MAGNA MATER, in front of which is the supposed House of Romulus; the HOUSE OF LIVIA, the DOMUS TIBERIANA, the PALACE OF THE FLAVIANS and the DOMUS AUGUSTANA, the PALACE OF CALIGULA, the THERMAE OF SEPTIMIUS SEVERUS, the PAEDAGOGIUM, the STADIUM, are all impressive witnesses of a greatness which has known no

General view of Trajan's Markets, the Loggia of the Knights of Rhodes and the Torre delle Milizie

Palazzo Venezia seen from the Victor Emmanuel Monument

solution of continuity; this continuity is also affirmed by the church of SAN SEBASTIANO, where Gelasius II. was elected Pope, and by the works of excavation and restoration which are being carried out by the new Italy, jealous guardian of her ancient heritage.

Any one of the monuments that we have named would form the pride of any land, yet after a few more steps we find ourselves before still another series of wonders on the **Via dell'Impero.** Conceived by the genius of the Duce, this road was inaugurated by the worthy successors of the legionaries of old on October 28th of the year XI of the Fascist Era.

A section of Via del Mare

Never before has the sun caressed in so small an area so many solemn, majestic and sacred relics of a greatness from which the whole civilized world has drawn its origin.

Let us commence at the COLOSSEUM, that typical expression of the greatness of Imperial Rome.

It was begun in 72 A.D. by Vespasian, and completed and inaugurated in the year 80 by his son Titus; some additions were made by Domitian and it was restored by Alexander Severus. Having been damaged by various earthquakes, in the thirteenth century it was partially transformed into a fortress by the Frangipane family. This grandiose amphitheatre afforded accommodation for 50,000 spectators, and witnessed memorable combats between gladiators and wild-beasts; in the 16th century it became the property of the Senate and People of Rome and then it gradually came to be looked upon as a convenient quarry for travertine stone. Under Benedict XIV. it was consecrated to the Christian cult.

The Fascist Regime has surrounded the Colosseum by a more worthy and glorious frame, creating the OPPIAN PARK (in which are the ruins of the DOMUS AUREA of Nero and a few remaining traces of the THERMAE OF TITUS) and, quite recently, the PARK OF TRAJAN, one of the most beautiful in Rome, containing the remains of the Thermae of the « Optimus Princeps ».

On the other side is the ARCH OF CONSTANTINE, built to commemorate

the victory of Constantine over Maxentius in the year 315 and restored by the Duce to its ancient dignity. It forms a worthy entrance to the **Via dei Trionfi** which, according to the desire of the Duce, was inaugurated by the Italian airmen led by Italo Balbo on the occasion of their triumphant return from their epic flight across the Atlantic.

Along this magnificent road, a truly imperial way, we see on one side the remains of the PALATINE AQUEDUCT, and, on the opposite side, the church of SAN GREGORIO MAGNO and the mystic cypresses of the CHAPEL OF ST. SYLVIA which remind us of the noble page of history

The Temple of Vesta

The Roman Campagna: Remains of an Aqueduct

written by St. Gregory the Great, who was known as the « Consul of God ».

Proceeding along the Via dell'Impero from the Colosseum, we see on our left the TEMPLE OF VENUS AND ROME, the church of SANTA MARIA NOVA and the colossal BASILICA OF MAXENTIUS, which we have already mentioned when speaking of the Roman Forum; here also are the two churches of SANTI COSMA E DAMIANO and SAN LORENZO IN MIRANDA.

To the right, near the powerful TORRE DEI CONTI, recently freed from the surrounding buildings, the relics and the heroic testimonies of the new Rome to which Benito Mussolini has given life will find a worthy home in the PALAZZO DEL LITTORIO. In monumental and historical significance, this building will be an estimable addition to the great monuments left by other centuries in this part of Rome.

Still on the right we find the remains of the FORUM OF NERVA or « Forum Transitorium », and to the left, a little further on, the CURIA, which we have already mentioned and which is now the church of Sant'Adriano. Here also is the FORUM JULIUM or of Caesar, erected to commemorate the battle of Pharsalus by the great emperor who excelled in arms, letters and politics, and who carried within him and expressed in the highest degree the spirit of Rome. It contained a temple dedicated by its founder to VENUS GENETRIX, the goddess from whom he professed to be descended.

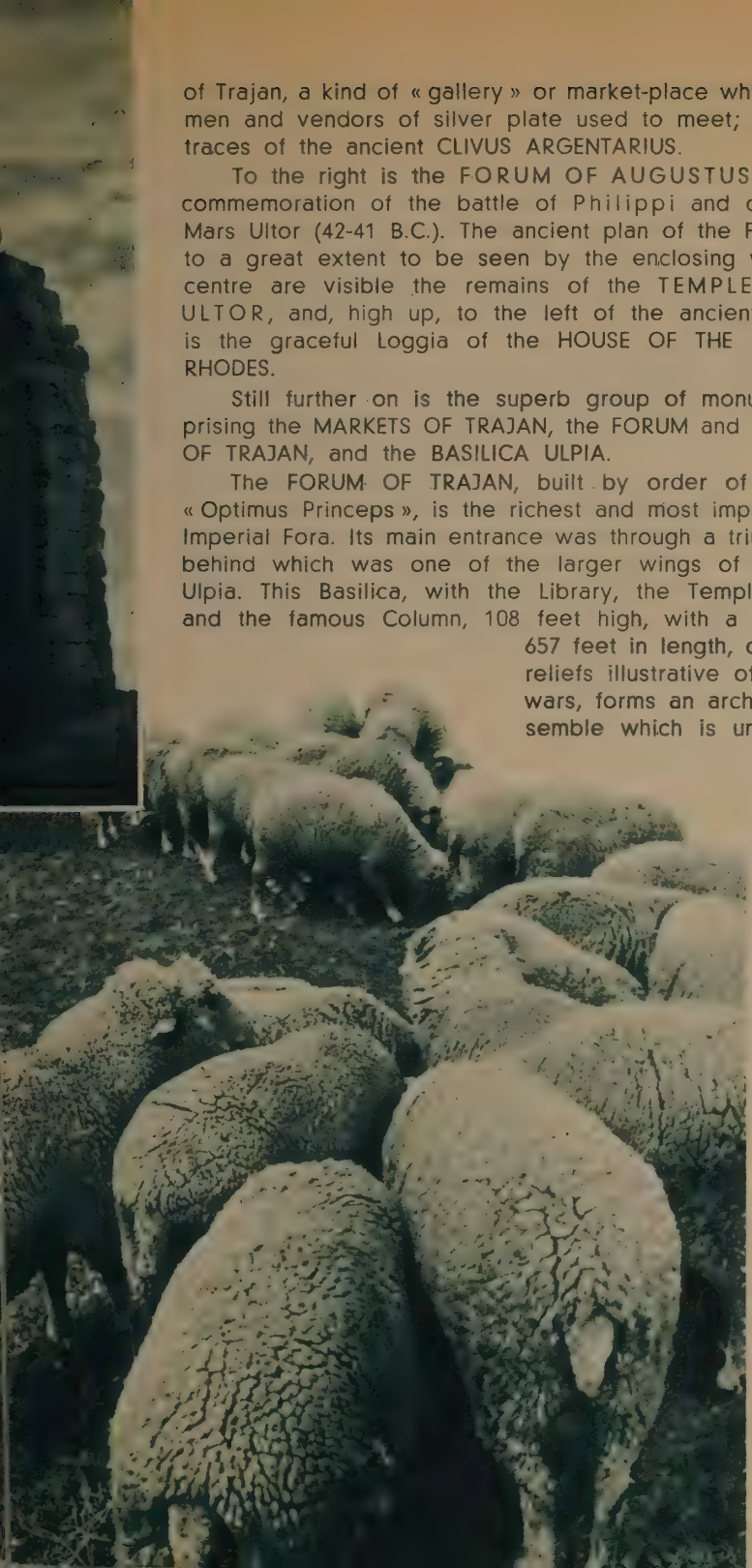
And then we see the BASILICA DEGLI ARGENTARI, dating from the times

of Trajan, a kind of « gallery » or market-place where business men and vendors of silver plate used to meet; near by are traces of the ancient CLIVUS ARGENTARIUS.

To the right is the FORUM OF AUGUSTUS, erected in commemoration of the battle of Philippi and dedicated to Mars Ultor (42-41 B.C.). The ancient plan of the Forum is still to a great extent to be seen by the enclosing walls. In the centre are visible the remains of the TEMPLE OF MARS ULTOR, and, high up, to the left of the ancient « heroon », is the graceful Loggia of the HOUSE OF THE KNIGHTS OF RHODES.

Still further on is the superb group of monuments comprising the MARKETS OF TRAJAN, the FORUM and the COLUMN OF TRAJAN, and the BASILICA ULPIA.

The FORUM OF TRAJAN, built by order of Trajan, the « Optimus Princeps », is the richest and most imposing of the Imperial Fora. Its main entrance was through a triumphal arch, behind which was one of the larger wings of the Basilica Ulpia. This Basilica, with the Library, the Temple of Trajan and the famous Column, 108 feet high, with a spiral band, 657 feet in length, of admirable reliefs illustrative of the Dacian wars, forms an architectural ensemble which is unique in the



The Roman Campagna: An Arcadian vision

world. Annexed to the Forum were the imposing MARKETS OF TRAJAN, the façade of which was conceived in the form of a hemicycle, probably to avoid the danger of landslides from the Quirinal Hill which Trajan had caused to be cut in order to build the Forum. The hemicycle, as will be noticed, is formed by two tiers of « tabernae », crowned by a third tier preceded by a terrace.

Piazza San Pietro

Behind the hemicycle, the Via Biberatica led to the covered market-hall, the function of which was probably similar to that of a modern bazaar.

Higher up, beyond the Markets of Trajan, appears the powerful outline of the TORRE DELLE MILIZIE.

After passing the elegant and austere sixteenth-century church of SANTA MARIA DI LORETO, we reach **Piazza Venezia,** where we see the Monument to Victor Emmanuel II. and the Tomb of the Unknown Soldier which symbolize and summarize the glorious period which gave to Italy Rome and unity.

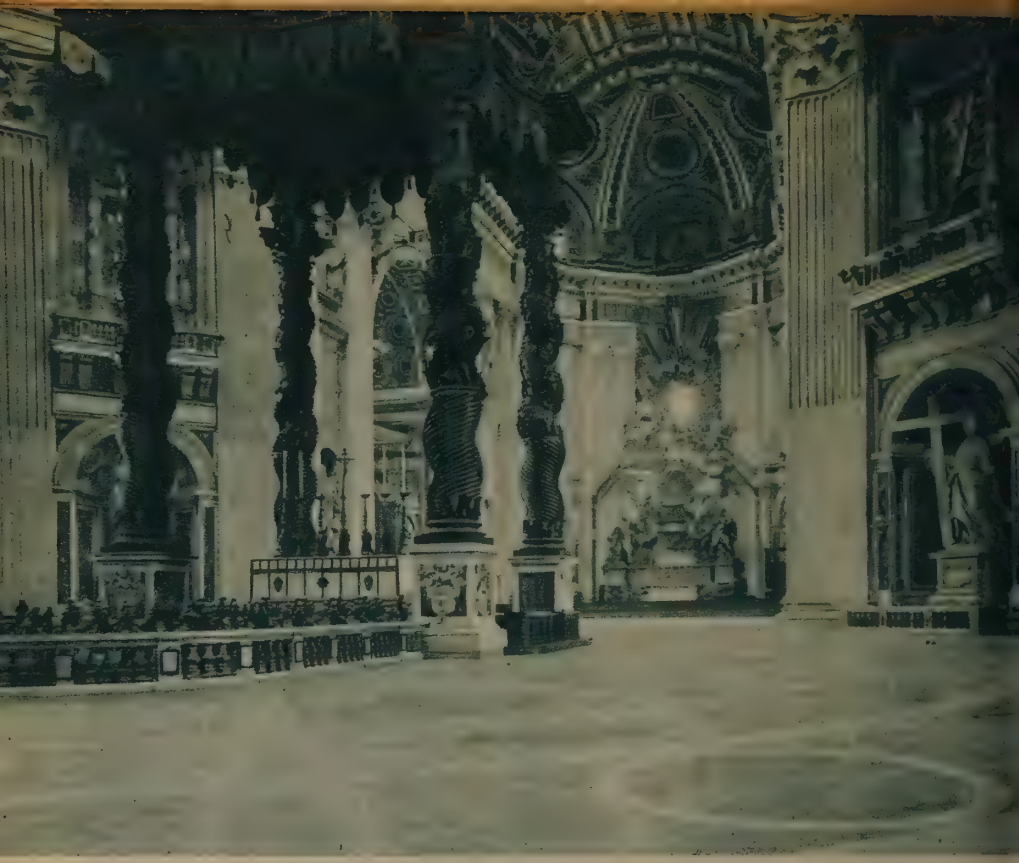
The MONUMENT TO VICTOR EMMANUEL, begun in 1885 and inaugurated

The imposing colonnade in Piazza San Pietro

in 1911 on the occasion of the fiftieth anniversary of the proclamation of the Kingdom of Italy, is the grandiose work of the architect Giuseppe Sacconi dedicated to the unification of Italy, while the Tomb of the Unknown Soldier will for ever stand as a symbol of love and sacrifice.

It is not without significance that Benito Mussolini, heir to the glories of the Roman civilization, has chosen for his headquarters the nearby Palazzo Venezia where are being forged the future destiny of a greater Italy and, at the same time, a new civilization.

The PALAZZO VENEZIA, the work of an unknown architect, begun in 1455 by Cardinal Pietro Barbo, later Pope Paul II., and enriched by the addition of the church dedicated to the Evangelist St. Mark and the so-called « Pa-



St. Peter's: The Tribune seen from the pillar of St. Longinus

lazzetto », was given to the Ambassadors of the Venetian Republic by Pius IV. It then passed into the hands of the Austro-Hungarian Empire, but was returned to Italy in 1916.

As we now turn back to glance from here on the beautiful Via dell'Impero, with the Colosseum — the most imposing monument of ancient Rome — arising in the background, we cannot but feel that this stately street is the most solemn and at the same time the simplest and most evident demonstration of the mysterious unity of Rome.

Only life could be capable of blending in such admirable unity the majestic solemnity of the Imperial Fora with the powerful strength of mediaeval towers, with the grace of the House of the Knights of Rhodes, and the profound mysticism of the churches that once were pagan temples; only life is capable of blending in perfect harmony the majesty of the past with the intense and disciplined movement that characterizes the 20th century.

Via dell'Impero is the symbol of Rome, and the man who created it is a great Roman.

This street joins — and not only in a material sense — the Colosseum, an expression of Rome's ancient power, to the Victor Emmanuel Monument, the Unknown Soldier's Tomb, and the Palazzo Venezia where Benito Mus-

solini creates a new Rome, worthy, in monuments and also in spirit, of its glorious past.

It is from here, the ideal and material centre of the Rome of yesterday and of to-day, that another new artery of the « Urbs » opens: the great road that connects the Eternal City with the sea.

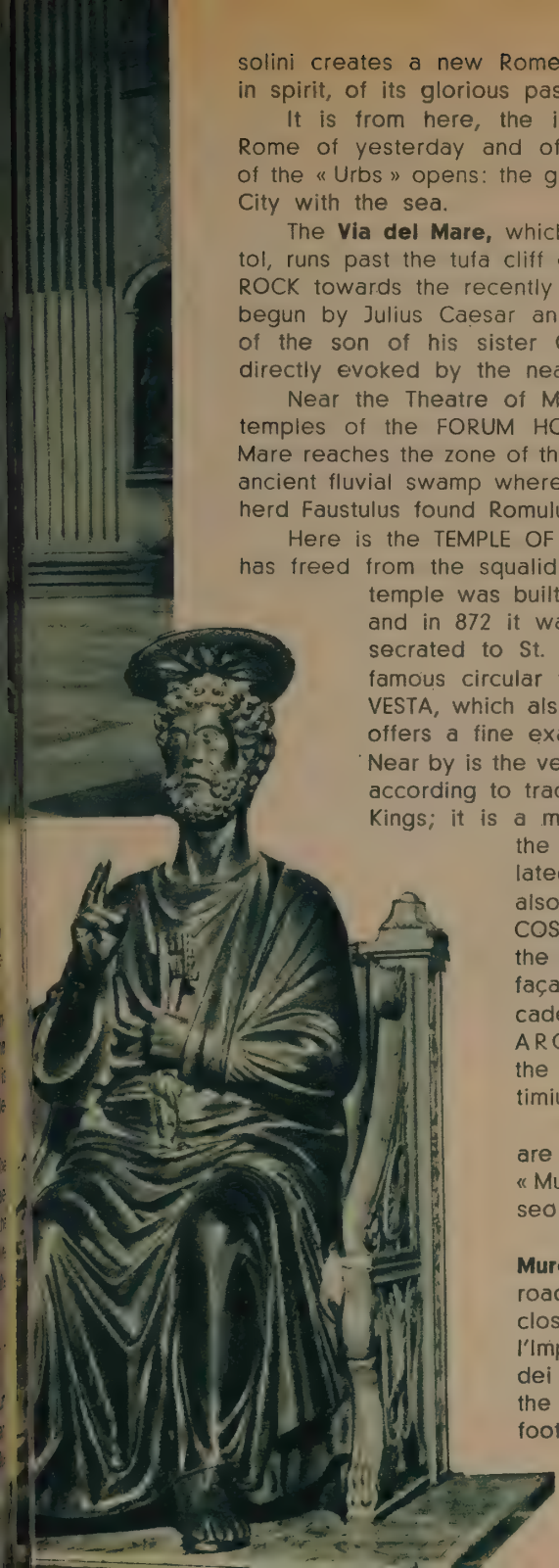
The **Via del Mare,** which starts from the foot of the Capitol, runs past the tufa cliff commonly known as the TARPEIAN ROCK towards the recently restored THEATRE OF MARCELLUS, begun by Julius Caesar and finished by Augustus in honour of the son of his sister Octavia, whose memory is more directly evoked by the nearby PORTICUS OF OCTAVIA.

Near the Theatre of Marcellus we see the ruins of the temples of the FORUM HOLITORIUM, and then the Via del Mare reaches the zone of the « Velabrum », so named after the ancient fluvial swamp where, according to tradition, the shepherd Faustulus found Romulus and Remus.

Here is the TEMPLE OF FORTUNA VIRILIS, which the Duce has freed from the squalid houses which surrounded it. This temple was built in the first century before Christ, and in 872 it was transformed into a church consecrated to St. Mary of Egypt. Here, too, is the famous circular temple, known as the TEMPLE OF VESTA, which also dates from the first century and offers a fine example of the Corinthian periptery. Near by is the very ancient CLOACA MAXIMA which, according to tradition, dates from the times of the Kings; it is a marvellous example of the skill of the ancient Romans in all that is related to the building of towns. Here also is the church of SANTA MARIA IN COSMEDIN, magnificently restored, and the ARCH OF JANUS with its four façades, built in the period of the decadence, together with the adjoining ARCUS ARGENTARIORUM erected by the money-changers in honour of Septimius Severus and Julia Domna.

In the vast PALAZZO DEI MUSEI are the important collections of the « Museo dell'Impero » and the « Museo di Roma ».

From here begins the **Via di Valle Murcia,** the third of the magnificent roads created by the Duce, which closes the ring formed by the Via dell'Impero, the Via del Mare and the Via dei Trionfi around the ancient part of the town. We have now arrived at the foot of the **Aventine,** the hill which



St. Peter's: The statue of St. Peter

once formed part of the ancient Servian city and on which the plebs and Caius Gracchus retired. It later became an aristocratic quarter of Rome with sumptuous palaces and opulent temples. After passing through an interesting period of history in the Middle Ages, it was abandoned during the last cen-

St. Peter's: Noah's Sacrifice by Michael Angelo (Sistine Chapel)

tury, but is now witnessing the development of a new suburb of Rome, spacious and surrounded by gardens, and rich in historical souvenirs and works of art.

Here are also many beautiful churches and other buildings: the church of SANTA SABINA, a beautiful and magnificent basilica of the fifth century; SANT'ALESSIO which recalls the fiery Romanity of the Crescenzi and the poetic legend of St. Alexis; SANTA PRISCA where St. Peter is said to have been baptized; SAN SABA with its Romanesque façade; the Benedictine oasis of SANT'ANSELMO; the magnificent garden and the « Priorato » of the Knights of Malta; and, on the site of the so-called « Castello dei Cesari », we find the headquarters of the « Opera Nazionale Balilla », where Italy's youth is preparing for a future destiny worthy of the glories of the past.

« Moses » by Michael Angelo (San Pietro in Vincoli)

Leaving the Aventine and descending along the Viale Aventino as far as Piazza di Porta Capena, we reach the entrance to the beautiful **Passeggiata Archeologica** where are the BATHS OF CARACALLA, begun in A.D. 211 by Antoninus Caracalla, continued by Heliogabalus and finished by Alexander Severus in A.D. 222-223. Proceeding along the ancient Appian Way, always inexpressibly fascinating, we reach the CATACOMBS OF ST. CALIXTUS with the Papal Crypt, the Tomb of St. Cecilia, and the Sacrament Chapels.

On the Via Appia Pignatelli we find the CATACOMB OF ST. PRAETEXTATUS with the large crypt called the « Spelunca Magna », and the « Hypogeum of Vibia ». On the Via delle Sette Chiese are the CATACOMBS OF DOMITILLA, also known as the Catacombs of « SS. Nereo e Achilleo », with their 4th-century basilica and the « Hypogeum of the Flavians » dating from the first century, while one can admire near by the most ancient representations of the Good Shepherd (1st century) and the well-known « Veiled Madonna with Bambino and Magi ».

Returning to the Appian Way, we find the Basilica of SAN SEBASTIANO FUORI LE MURA with the celebrated « Acclamations to the Apostles St. Peter and St. Paul », the PLATONIA and the famous CATACOMBS rich in memories of the early Christian martyrs, while further down is the TOMB OF CÆCILIA METELLA, a massive construction measuring 65 feet in diameter. It is covered with travertine stone and adorned with a fine frieze.

A large inscription records that Caecilia Metella, the daughter of Quintus Metellus Creticus and wife of Crassus, son of the triumvir, was buried here.

After this tomb the road becomes more and more interesting, and this « Ancient Section of the Appian Way », between the third and eleventh milestones, is the most picturesque of all.

On either side is an uninterrupted succession of the remains, sometimes modest, sometimes imposing, of the tombs of those great builders of the western civilization.

Beyond the fifth milestone, between two pine-trees, we find what is supposed to be the tomb of one of the Curiatii. In any case it is one of the most ancient sepulchral ruins on the Appian Way.

A little further on, from the terrace of the VILLA OF THE QUINTILII, looking towards Via Appia Nuova, we can enjoy a magnificent view of the Roman Campagna.

The Obelisk in Piazza San Giovanni

The Church of S. Maria di Loreto

We commenced our pilgrimage from the « Arx » on the Capitoline Hill, whence first irradiated the power of Imperial Rome that was to create the « orbis romanus ». In the fullness of time, when God came down to earth to conquer with His blood a place in Heaven for mankind, and entrusted men with the great universal mission of preaching the good news and keeping the New Law, it was once more Rome that was chosen by Providence to become the head and the centre of the new universal and spiritual conquest, and it was thanks to Rome that the « Christian world » came into being.

It has been said that **Piazza San Pietro,** with the Basilica, the great dome and the double hemicycle forming the colonnade, is a symbol in stone of the embrace with which the Vicar of Christ enfolds the whole world.

And in fact, the solemn piazza, nearly 800 feet wide and over 1100 feet long, with its colonnade of 284 columns, its magnificent Egyptian granite obelisk brought over from Heliopolis, and the two handsome fountains, seems indeed to be ready to embrace the whole of humanity.

We all know that the BASILICA OF ST. PETER was erected for the first time by Constantine over the tomb of the Apostle Peter, and that Julius II. ordered its complete reconstruction by Bramante; the imposing temple we now admire was begun in 1506 (after a series of designs by Raphael, Peruzzi and Sangallo) and the vast dome was erected by Michael Angelo. Later Paul V. employed Carlo Maderna to carry out further additions, and the church was finally consecrated by Urban VIII. in 1626.

The Church of Trinità dei Monti

One cannot describe St. Peter's; one can only admire and love it. We may gaze on the « Pietà » of Michael Angelo with wonder, and so also the « Cathedra » of St. Peter and the « Baldacchino » in bronze by Bernini; we may admire the richness of the marbles and the innumerable monuments and works of art, of which any one alone would be sufficient to form the envied glory of a town; we are amazed by the immensity of the church and its stateliness, but no words can describe the emotion we feel in the presence of so many marvels.

Nor can we describe the emotion and amazement with which the wonders of the **Vatican City** inspire us. In this miniature State — as it was defined by Pius XI., the Pope of the « Conciliazione » — where are assembled more treasures than in any other of the

great empires of the world, one cannot but feel deeply moved by the realization of Dante's prophecy which foresaw the Rome of Caesar and the Rome of Peter united and yet distinguished one from the other.

In this small corner of the earth which for many centuries has been the centre of Christianity, are assembled the most sacred relics in existence and the greatest works of art man has conceived and created during a period of over two thousand years.

Merely to mention the Tomb of the Apostle, the Basilica, the Cathedra of St. Peter, the Baldacchino, the Grottoes, the Dome, the Palaces and the Sistine Chapel, the Belvedere, the Stanze and the Logge of Raphael, the Pauline Chapel, the Library, the Museum, the Galleria dei Candelabri, the Picture Gallery, the Sacristy, and the Vatican Gardens, is to enumerate a series of marvels which have often given their name to a whole century.

* * *

After the rapid trip which, starting from the « Arx » on the Capitoline Hill, has enabled us to see all the glories of the Rome of the Caesars, we may now set out from the Vatican, the glorious citadel of the Popes, to follow another itinerary, also rapid.

But this time we shall follow a more irregular course, passing from one monument of the Christian world to another.

Leaving the Tomb of the Prince of Apostles, we shall first of all concern ourselves with the other great basilicas.

Here is SAN GIOVANNI IN LATERANO, erected by Constantine on the site of the « Domus Faustae » — once belonging to the family of Lateranus — and

The Fountain known as « Barcaccia » in Piazza di Spagna

dedicated first to the Redeemer and later to St. John the Baptist and St. John the Evangelist.

This is the « omnium Urbis et orbis Ecclesiarum Mater et Caput », in other words, the Cathedral of Rome and of the world, where a new era for Catholicism was inaugurated after the signing of the Lateran Pacts which marked the close and the beginning of two of the most important cycles of the history of humanity.

It would be impossible to describe all the marvels that are contained in this great basilica.

The Colosseum and the Temple of Venus Genetrix

But whoever has come to Rome has admired the façade by A. Galilei (1736), the Porta Santa, the Papal Altar, the beautiful Cosmatesque Cloister by Jacopo and Pietro Vassalletto (early 13th century) and the Baptistery, and has probably also visited with emotion the Scala Santa near the Basilica.

On one side of the Basilica is the PALAZZO DEL LATERANO, built on the site of the « Patriarchium », the cradle of the Church of Rome and the residence of the Popes until the fourteenth century. It now lodges the LATERAN MUSEUM, comprising the Museo Profano, the Christian Museum and the Museo Missionario-Etnologico.

SANTA MARIA MAGGIORE, erected by Pope Liberius (a fact which has however been recently doubted) in 352-66, was built as a result of a beautiful and poetic vision.

In this Basilica the solemn majesty of the central aisle and the magnificent colouring of the precious mosaics of the fifth century, as well as the sumptuousness of the Arco Santo, and the Sixtine and Pauline Chapels,

impart an atmosphere of indescribable poetry and beauty, which we also feel when beholding the precious relics of the Cradle of Bethlehem.

The splendid fifth-century mosaics and those of the late thirteenth century by Filippo Rusuti, the fine ceiling attribued to Sangallo (late fifteenth century), the Sixtine and Pauline Chapels and, outside, the apse (16th and 17th centuries) and the façade by Ferdinando Fuga (18th century), all form a chain of glories dedicated throughout the centuries to the name of Mary.

And how shall we speak of the Basilica of SAN PAOLO FUORI LE MURA, which we might have visited after our walk on the Aventine, passing on the way the Barracks of the Fire Brigade, the famous Pyramid of Caius Cestius and the imposing Porta San Paolo.

The ancient Basilica was founded by Constantine in 314 over the burial place of the Apostle.

Many times restored and embellished by the Popes and despoiled by the Saracens, the Basilica was completely destroyed in 1823 by a great fire, after which it was built anew.

The majesty of the interior with its wide, luminous nave and many powerful columns of marble, is worthy of Rome's greatness as revealed in the monuments that have risen in every century.

Here, no less than at the Lateran, one cannot but kneel in devout prayer or stand in reverent silence in front of the Tomb of Paul of Tharsis, above which arises the Baldacchino by Arnolfo di Cambio and the Triumphal Arch

The Farnesina, Headquarters of the Royal Academy of Italy

erected by Galla Placidia. It is with profound admiration that we stand within Vassalletto's imposing CLOISTERS (early 13th century) or before the magnificent transept of the apse embellished with mosaics of the 13th century and the two altars adorned with malachite and lapis lazuli.

* * *

Having briefly mentioned the four great Basilicas, we shall rapidly examine the most beautiful and the most significant churches belonging to the crown of temples, some great and some humble, which adorn the Eternal City.

In the churches of Rome, Italy, the birthplace of so many saints and artists, has expressed in unsurpassable manner and in manifold forms the two supreme aspirations of the human soul, God and Country.

From the altars of the catacombs to the Palaeo-Christian basilicas, to the Romanesque and the Gothic, which is so characteristically Italian, and the serene lines of the Renaissance, the so-called architecture of the Counter-

Reformation, the Baroque which was at first rather severe only to become pompous and redundant — all these styles of architecture reveal in the temples of Rome the soul of the Italians and their artistic genius.

But the churches of Rome are not only the proof of an uninterrupted sequence of artistic expression, nor do they only mark the various stages of civilization; perhaps more than all they are the proof of the universality of Rome which has assumed in the forms of expression of the successive centuries an inimitable character of unity.

The most venerable churches in the city, the great basilicas and the many small and simple churches, are all architectural expressions of one Faith, even though the outward forms may be representative of diametrically opposed tastes and artistic tendencies. Here the spirit pervades matter, and as the spirit is one and unitary, it seems even to mould the marbles and bronzes and to give them a character of unity after its own image.

In Rome it is almost impossible to say that a church belongs entirely to this or that century. Also excluding the churches built prior to the Counter-Reformation, in which it is literally impossible not to find marks of successive centuries, the churches built after the sixteenth century, although they are artistically homogeneous, always bear certain traces of the art of other centuries. And each church, although Faith

The Farnesina - Hall of Perspectives

and ritual are the same in all, has its own personality which distinguishes it from all others.

The churches of Rome are therefore a marvellous example of the subjugation of matter to a spirit which vanquishes it, unites it and harmonizes it; they are an example of the spirit's capacity of unifying without standardizing and without destroying individuality.

A concrete example of this assertion is offered by SANTA CROCE IN GERUSALEMME, one of the « seven churches » visited by pilgrims.

The classic remains of the « Sessorium », the actual building erected by Constantine, the restoration work carried out in Romanesque style, the 15th-century decorations, the alterations accomplished in the 18th century, make of this temple (particularly important for the relics of the Passion which are enshrined in it) a vivid example of that mysterious organic continuity typified in the monuments of Rome of all periods.

In SANTA COSTANZA we find one of the most singular and important architectural expressions of Christian triumph in the fourth century, while the nearby basilica of SANT'AGNESE FUORI LE MURA, as well as the church of SANTA CECILIA IN TRASTEVERE, remind us of the poetical martyrdom of the adolescent Christian heroines who, with a spirituality quite unknown to the pagan world, renewed and exalted in the Sign of the Cross the heroic deeds of Roman women.

SAN CLEMENTE was built on the site of an ancient pagan building, restored during the 8th and 9th centuries, destroyed by Guiscard in the 11th century, restored again by Sixtus V. towards the end of the 16th cen-

Detail of Garibaldi's Mohument on the Janiculum

tury and later by Clement XI. at the beginning of the 18th century. It reminds us of the harsh battles the rising Church of Rome had to fight and is a fine example of a succession of different styles, comprising walls from the republican era and remains of a 2nd-century building, the remains of the « Mithraeum », 12th-century mosaics, some famous frescoes by Masolino da Panicale (15th century) and some modern alterations; in spite of all this the ensemble has a particular individuality of its own.

The same fact strikes us in the Basilica of SANTI GIOVANNI E PAOLO, built by Byzantius and his son Pammachius (398) on the traditional site of the house of SS. John and Paul.

To the impressive relics found beneath the ground, the important remains of a Roman house and the powerful and ornate loggias of Romanesque style, are united the memories of a great apostle of the 18th century, St. Paul of the Cross, founder of the Passionists who still carry on their mission in the church and in the neighbouring convent.

It would be impossible to mention all the titular churches, or, in other words, all the churches to which, from the 4th, 5th and 6th centuries, presbyters and deacons were attached to administer the Sacraments and to attend to deeds of charity; churches which tradition, often corroborated by historical facts and archaeological remains, connects with the « domestic » churches of the early centuries.

Some of them we have already mentioned, such as SANTA CECILIA IN TRASTEVERE (titulus Caeciliae) with its fine frescoes by Cavallini; SAN CLEMENTE (titulus Clementis); SANTI GIOVANNI E PAOLO (titulus Byzantis or Pammachii); SANTA SABINA (titulus Sabinae); SAN MARCO (titulus Marci) adjoining the Palazzo Venezia; SANTI NEREO ED ACHILLEO (titulus de Fasciola); SANTA PRISCA (titulus Priscae).

A glimpse of Rome from the Janiculum

Other artistically important titular churches are SANTA PRASSEDE (titulus Praxedis or Pudentis) with the sparkling beauty of the ninth-century mosaics in the « Chapel of San Zenone »; SAN LORENZO IN LUCINA (titulus Lucinae) with the « Cappella Fonseca » by Bernini and the famous « Crucifix » by Reni; SANTI QUATTRO CORONATI (the ancient titulus Aemilianae) with the very interesting « Chapel of St. Sylvester » and the marble Cloisters which is a masterpiece of Roman artisans; SANTA SUSANNA (titulus Gaii) which possesses one of the finest Baroque façades in Rome; SANTA MARIA IN TRASTEVERE (titulus Callisti or Juli) and SAN PIETRO IN VINCOLI (titulus Eudoxiae), which we shall describe more fully.

SANTA MARIA IN TRASTEVERE was the first church in Rome to be dedicated to the Virgin.

Erected by St. Calixtus (217-22) and St. Julius (340), it was reconstructed by Innocent II. (1130-43). The 12th and 13th-century mosaics on the façade were probably restored by Pietro Cavallini; the church also has a fine portico with important mediaeval fragments, some beautiful mosaics (1140) in the apse and others representing the life of the Virgin by Cavallini (1291 or early 14th century), some Renaissance sepulchral monuments and a ceiling designed by Domenichino (1617). Such art treasures make this church, where legend and tradition as well as art and piety are entwined, one of the

A statue on Ponte Sant'Angelo

most important and representative temples in Rome. At SAN PIETRO IN VINCOLI, the history of which has been traced as far back as the fifth century, are kept the chains with which, according to tradition, the Apostle Peter was bound.

The church also contains one of the most powerful expressions of human

Villa Borghese: « Fontana dei Cavalli Marini »

artistic genius, the « Moses » of Michael Angelo.

If the Lateran is the cathedral of Rome and of the world, SANTA MARIA IN ARACOELI is in a certain sense the church of the city of Rome.

Built on the « Arx » of the Capitol before the year 574 on the very spot where the Sibyl is said to have prophesied to Augustus the imminent coming of the Son of God, it was reconstructed and enlarged by

the Franciscans in the 13th century. The celebrated flight of steps leading up to the church dates back to 1348.

In the Middle Ages this church almost assumed the dignity of a forum of Rome. It was the meeting place of the Senate; Charles of Anjou assembled the Romans in parliament there, and within its precincts the Guelphs defended themselves against Henry VII.; the voice of Cola di Rienzo echoed within its walls; even Popes dwelled therein, and after the battle of Lepanto, Marcantonio Colonna triumphed there. The very history of the Eternal City is bound to the history of this church.

The memories of other centuries are equally numerous in SAN LORENZO FUORI LE MURA, a venerable and charming church, one of the five patriarchal basilicas of Rome and one of the « seven churches » visited with great devotion by pilgrims.

According to tradition, this church was founded by Constantine on the burial-place of St. Cyriaco in the « Agro Verano », and from the fifth to the nineteenth centuries it was enriched by many important and sometimes remarkable works of art.

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We must repeat that the churches of Rome cannot be classified in strictly chronological order, but, if it is absolutely

Villa Borghese: Children playing in the sunshine.

necessary to group them according to their epoch, this can, and sometimes must be done.

Gothic architecture is almost non-existent in Rome.

One example, the only example in Rome of a large church in Gothic style (for everywhere in Rome it is the calm balance of the full round arch that triumphs), is afforded by SANTA MARIA SOPRA MINERVA, built on the former site of a temple dedicated to Minerva. Rebuilt in 1280, probably by Fra Sisto and Fra Ristoro, the architects of Santa Maria Novella in Florence, the church was restored to its original Gothic aspect towards the middle of the last century. It contains valuable art treasures in great number.

The paintings by Melozzo da Forlì, Filippino Lippi, Antoniazzo Romano and those attributed to Perugino; the tombs and sculptures by Giovanni di Cosma, Giuliano da Maiano, Isaia da Pisa, Luigi Capponi, Mino da Fiesole and Michael Angelo, are works of art that make this church a fine and rich museum where the art of the Italian Renaissance triumphs under Gothic arches.

Though the following centuries have often interrupted or troubled the serene rhythm of their original conception, there are many churches which may be considered typical expressions of the Renaissance art in Rome.

Of SAN PIETRO IN VINCOLI, restored by Sixtus IV. (1471-84), the Pope of the Renaissance and builder of many edifices, and later by Julius II. (1503-1513), we have already spoken.

In 1477 Sixtus IV. reconstructed the church of SANTA MARIA DEL POPOLO. In this church the Renaissance is admirably represented by the frescoes of Pinturicchio and Tiberio d'Assisi, by the sculptures of Bregno and Mino da Fiesole, culminating in the Chigi Chapel where Raphael has shown his skill as architect and sculptor.

The expressions of art due to the powerful brush of Caravaggio, the skilful chisel of Algardi, the brilliant genius of Bernini, and the courtly delicacy of Maratti, have made of this church yet another museum in which past centuries have, as it were, collected some of the most original manifestations of art in Rome. The church of SANT'AGOSTINO was erected during the Renaissance (1479-83). Its façade conserves something of the power of the marbles of the Colosseum with which it was decorated. In it we may admire one of the most interesting works of Raphael: the « Prophet Isaiah ».

Between 1484 and 1486 the church of SAN PIETRO IN MONTORIO was rebuilt. According to tradition, it was founded by Constantine on the spot where St. Peter was crucified. Adjoining this church, which is splendidly situated commanding an unsurpassably beautiful panorama of the city, is the small « Tempietto » of Bramante which seems to unite all the perfections of the Renaissance.

Near by is the magnificent FONTANA DELL'ACQUA PAOLA built by Paul V. in 1612. From the Fontana Paolina, an avenue flanked by busts of the heroes of the wars for the unification of Italy, leads to the **Piazzale del Gianicolo** with the Monument to Garibaldi. From here we can look down on the whole of Rome with the distant hills in the background.

Villa Borghese: The Temple of Æsculapius in the Giardino del Lago

At the foot of the Janiculum is the PALAZZO CORSINI (1729-32), now the property of the Government and assigned to the National Gallery of Ancient Art. Opposite this is the superb Villa of the Chigi family, known as the FARNESINA, built by Baldassarre Peruzzi (1508-11) and decorated by Raphael and his pupils with the famous frescoes of the « Myth of Psyche » and the « Galatea ». This palace is now occupied by the Royal Academy of Italy.

Among the many examples of the fusion of Renaissance and Baroque art, we shall only mention the Basilica of Santi Apostoli and the church of Santa Maria della Pace.

The Basilica of the SANTI APOSTOLI is another of the fifteenth-century churches which were restored by Sixtus IV. (after a previous restoration by Martin V.). But here, though Renaissance art triumphs in the façade and the portico by Baccio Pontelli and in the monument to Cardinal Pietro Riario (school of Bregno or Giovanni Dalmata), in the interior the Baroque influence predominates in the ceiling by G. B. Gaulli and the Neo-classic style in the monuments to G. Volpato and Pope Clement XIV. by Canova. On the other hand, in SANTA MARIA DELLA PACE it is the Renaissance that reigns in the interior, with the delicate cloister by Donato Bramante and the « Sibyls » by Raphael, while the fine travertine façade by Pietro da Cortona is Baroque.

Towards the end of the fifteenth century and at the beginning of the sixteenth, the renovation of the town, begun under Nicholas V. and Sixtus IV., continued at an increasing pace; and as we advance further into the sixteenth century, it becomes continually more difficult to speak about Roman architecture and to analyze its various expressions. In the sixteenth century, after having for a while suffered the vast offensive of anti-Romanism from the north, Rome passed to the counter-offensive, having before her a wider field and spreading the light of her civilization throughout every part of the world.

New armies, led by new Roman generals, again set out to conquer, but this time armed with the Holy Gospel and the Cross. It is the period in which we come across the great

Detail of the monumental fountain in Piazza del Popolo

From the Pincian gardens

phenomenon known to history as the Counter-Reformation, which was followed, in the field of art, by the Baroque; Rome created new forms of art and gave to all Europe the great music of Pierluigi da Palestrina, the architecture of her churches designed by Vignola, and her palaces, fountains and squares created by the genius of Bernini and Borromini.

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Let us now recommence our pilgrimage through the marvels of the Eternal City. We shall set out once again from St. Peter's, from which the religious and civil architecture of the great Papal Rome of the last centuries has originated.

Passing through the « Borghi », we reach CASTEL SANT'ANGELO, the Mausoleum erected by the emperor Hadrian as a tomb for himself and his descendants; it is the greatest expression of the civil architecture of Papal Rome, just as St. Peter's is the greatest expression of religious architecture and the Colosseum that of the architecture of the Rome of the Caesars.

Before being restored to its former solemnity and dignity by the work of isolation undertaken by the Fascist Regime, the Mausoleum had undergone numerous transformations and adaptations: fortress in 271; prison at

Bernini's « David »

the time of Theodoric; seat of the Conclave of 1159; refuge of Cola di Rienzo and afterwards of the Popes, and again a prison and place of torture, it now shelters the glorious flags of the Italian regiments.

The spiral passage, dating from Roman times, the « Cortile d'onore », the historical museum of the Castle, the loggia of Julius II., the wide terrace that commands a wonderful view of Rome, the thousand works of art

The Birth of Aphrodite (National Museum)

and the memories of this monument so profoundly linked with the history of Rome, have a secret and unchangeable charm.

Near by the Castel Sant'Angelo is the CASA MADRE DEI MUTILATI (Home for Wounded Soldiers) and, a few steps further on, the PALAZZO DI GIUSTIZIA (Law Courts) which competes with the Castle in size.

We must now cross the Ponte Sant'Angelo, the ancient « Pons Aelius », and proceed towards the **Renaissance Quarter** which Fascism is now restoring to a new splendour.

Here, with the exception of the PALAZZO DELLA CANCELLERIA where the architecture of the « Quattrocento » is exquisitely represented by the Bram-

Detail of the Trevi Fountain

ante courtyard, the architecture of the Counter-Reformation and the Baroque period triumph everywhere.

In the churches of SAN GIOVANNI DEI FIORENTINI and CHIESA NUOVA or « Santa Maria in Vallicella » — whence the influence of San Filippo Neri in

favour of the Counter-Reformation irradiated — we have two forcible expressions of true sixteenth-century Roman art; with the difference that while San Giovanni dei Fiorentini has been left untouched by subsequent additions, Santa Maria in Vallicella was rendered more sumptuous by the creative power of Francesco Borromini in the adjoining «Oratorio» and «Philippine Monastery».

In the PALAZZO FARNESE the genius of Antonio da Sangallo, of Michael Angelo and of Giacomo della Porta has created a great patrician palace, typically expressive of «Cinquecento» art, while, not far from here, in **Piazza Navona** — which still preserves the original shape and dimensions of the Stadium of Domitian — we find a fine example of spacious and decorative architecture, enhanced by Bernini's splendid fountain of the Rivers, the church of SANT'AGNESE by Borromini and the PALAZZO DORIA PAMPHILI.

Retracing our steps, we come first to the church of SANT'ANDREA DELLA VALLE, a luminous and balanced, but rather ostentatious expression of Counter-Reformation architecture, inspired by the neighbouring church DEL GESÙ, and then to the PALAZZO LITTORIO which contains a Votive Chapel dedicated to the martyrs of the Fascist Revolution. A little further on, we should stop to admire the «Area Sacra» at the **Largo Argentina,** comprising four temples dating from Republican times, recently excavated as part of the Duce's great programme for restoring Rome to its ancient dignity.

The Fountain in Piazza del Quirinale

One of these temples is peripteral hexastyle, another probably dedicated to Hercules Custodian, the third perhaps to Bellona, and the fourth to a divinity as yet unidentified. All four are particularly interesting for their great age and rarity.

We must not forget that in the neighbouring **Piazza Mattei** we can see, together with the fine PALAZZO MATTEI, the famous and charming FONTANA DELLE TARTARUGHE or Tortoise Fountain.

The church DEL GESÙ is not only one of the richest and stateliest churches in Rome, it is also the prototype of the style of church, created by Vignola, consisting of a central nave with lateral chapels and ample vault. After the illuminating genius of Leon Battista Alberti and the example of Michael Angelo who, in Santa Maria degli Angeli, found in the majestic arch of the Roman thermae an architectural form appropriate for the new and greater majesty of the temples of Christian Rome, it was Vignola who fixed the type of the Counter-Reformation church which dominated throughout Europe for many years after.

In the church del Gesù it is almost superfluous to point out the famous and resplendent Altar of St. Ignatius in which all arts — architecture, painting, sculpture and inlaywork, and all materials — marble, bronze, stone, metals and precious gems, have been used to exalt the glory of the great Condottiere who conquered so large a part of the world for Rome.

Quite closeby is the equally sumptuous church of SANT'IGNAZIO, with a very fine ceiling painted by the famous Padre Pozzo, and the COLLEGIO ROMANO which for many years was one of the most important centres of European culture.

From the Collegio Romano it is but a short distance to **Corso Umberto I.,**

Via Veneto

the famous thoroughfare which runs in a straight line through the very heart of the city. Along the Corso and in the neighbouring quarters on either side we find an imposing series of important monuments. Towards Piazza Venezia is the PALAZZO BONAPARTE (now Misciatelli) where the mother of Napoleon died, and the grandiose PALAZZO DORIA with two façades, one of them attributed to Pietro da Cortona, the other by Valvassori. This palace contains a valuable Picture Gallery which includes, among others, the portraits of Navagero and Beazzano by Raphael and of Pope Innocent X. by Velasquez.

Further down the Corso we come to the **Piazza Colonna,** which is enclosed by the PALAZZO FERRAJOLI, the PALAZZO DELLA STAMPA with a portico of sixteen columns brought from Veii, the PALAZZO CHIGI and the GALLERIA.

In the centre of the piazza stands the famous COLUMN OF MARCUS AURELIUS, formerly attributed to Antoninus Pius. It was erected in imitation of the Trajan column to celebrate the victory over the Quades and the Marcomanni, and in the spiral band of bas-reliefs episodes of the Germanic and Sarmatian wars are depicted.

At a short distance to the left of the Corso is the PALAZZO DI MONTECITORIO in the square of that name. The palace, begun in 1650 by Bernini, was completed by Mattia de' Rossi and C. Fontana for Innocent XII. who transferred here the Law Courts, hence its name of « Curia Innocenziana ». Since 1870 it has been the seat of the Camera dei Deputati (Chamber of Deputies). The obelisk in the centre of the piazza was placed there by Pius VI.; it was brought from Heliopolis to Rome by Augustus who had set it up in the Campus Martius.

A little further on we reach another of the marvels of Rome, the PANTHEON, originally built by Agrippa in 27 B.C. It was struck by lightning during the reign of Trajan and reconstructed by Hadrian, but it was pillaged by the barbarians and the emperor Constans in 663. In 609 Boniface IV. consecrated it as a Christian church to Santa Maria ad Martyres. In 1435 it was freed from the surrounding building by Eugenius IV. The Pantheon, in which the Kings of Italy are buried, is doubly sacred to all Italians.

Near by is the PALAZZO MADAMA, which once belonged to Marguerite of Austria, and is now the seat of the Senate.

Let us return to Piazza Colonna and proceed along the Corso. After the church of SAN LORENZO IN LUCINA, which we have already mentioned, beyond PALAZZO RUSPOLI and the church of SAN CARLO AL CORSO, we come to another notable monument which the Fascist Regime is about to restore to its former dignity: the MAUSOLEUM OF AUGUSTUS or « Augusteum ».

Of ample dimensions (measuring 290 feet in diameter), it was formerly surmounted by a tumulus and flanked by an « ustrinum ». From a state of ruin, it was transformed into a fortress by the Colonna family (12th century), the fortifications subsequently being destroyed by Gregory IX. in 1241. In 1354 the body of Cola di Rienzo was cremated here. At the time of the Renaissance it was used as a vineyard and in the eighteenth century was adapted as an amphitheatre In the nineteenth century it was employed for dramatic representations and various kinds of entertainments. Recent explorations in the mausoleum have led to the discovery of an access to the crypt which was the burial-place of the Julia Claudia « gens ».

Continuing along the Corso, we come to **Piazza del Popolo,** one of the most beautiful squares of Rome for its symmetry and imposing size.

The Fountain of the Naiads in Piazza dell'Esedra

In the middle of the piazza is an obelisk brought by Augustus from the Temple of the Sun in Heliopolis, and placed in its present position by Sixtus V. in 1589. The elegant arrangement of the square is due to Giuseppe Valadier (1814), who harmonized the two hemicycles, the fountains, the approaches and the terrace of the Pincio in a beautiful ensemble.

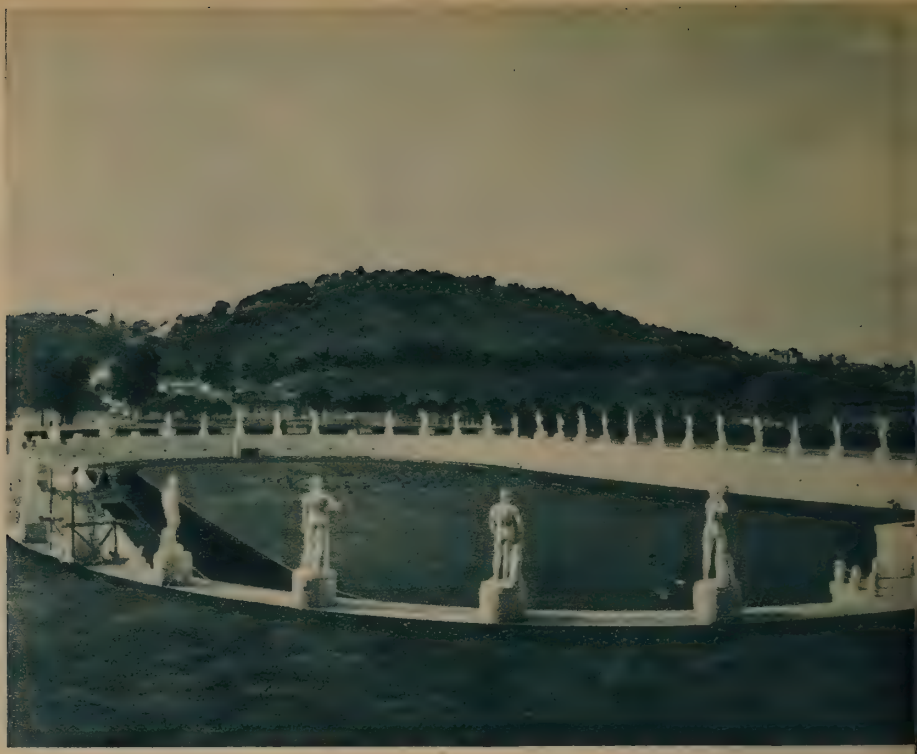
The church of SANTA MARIA DEL POPOLO, with its façade by Vignola and handsome interior decorations by Gian Lorenzo Bernini, has already been mentioned. It adjoins the famous **Porta del Popolo.**

Passing through this historic gateway and through the propylaea by Luigi Canina, we enter the charming **Villa Umberto I.,** formerly the Villa Borghese, which was built as a summer residence for Cardinal Scipione Borghese according to the designs of Giovanni Vasanzio (17th century).

Having walked along the fine, shady avenue which begins at the entrance of the park, we can leave the Villa a moment to cast a glance at the **Valle Giulia.** Here, among the many foreign cultural and scientific Academies which bear witness to the universality of Rome, is the NATIONAL MODERN ART GALLERY, designed by the architect Cesare Bazzani, and containing many masterpieces of Italian artists of the 19th and 20th centuries.

At the bottom of the Valle Giulia is the sixteenth-century VILLA DI PAPA GIULIO, erected by Vignola and Ammannati (1551-53) for Pope Julius III., and containing the ROYAL NATIONAL MUSEUM OF VILLA GIULIA which comprises an important collection of pre-Roman antiquities found in Latium, southern Etruria and Umbria. Among the many hundreds of objects forming the collection, it will be sufficient to mention the « Apollo of Veii », the « Barberini Collection », the celebrated « Cista Ficoroni » and the « Castellani Collection ».

We may return to the Villa Borghese by the entrance that leads to the ZOOLOGICAL GARDENS, which are now among the richest and most modern in Europe. Proceeding along the avenue of this magnificent park, we reach the MUSEUM and the GALLERIA BORGHESE, situated in the « Casino Borghese »



The Mussolini Forum

built at the beginning of the 17th century. The very name of the Galleria Borghese conjures up in our minds a host of splendid masterpieces: the « Pauline Borghese » by Canova; « David », « Apollo and Daphne », and the « Rape of Proserpine » by Bernini; the « Burial of Christ » by Raphael; « Danae » by Correggio; « Sacred and Profane Love » by Titian; the « Madonna and Bambino » by Botticelli, etc.

Once outside in the green gardens again, we can stop on our way to admire the beautiful **Piazza di Siena,** proceeding thence to another of the celebrated parks of Rome: the **Pincio,** laid out by Valadier on the Pincian hill.

Who has not heard of the famous view at sunset from the terrace of the Pincio, a vision that has inspired the poets and artists of the whole world?

And who, passing in front of the graceful VILLA MEDICI, which is the seat of the Academy of France, will not recognize another of the celebrated panoramas of Rome, with the small fountain framed by ilex-trees in the foreground, painted by so many artists of all countries?

A few steps away is the famous **Trinità dei Monti,** so beautiful in the light of the setting sun, and the grandiose, picturesque and no less famous flight of steps (Spanish Steps) by Alessandro Specchi and Francesco de Sanctis (18th century) leading to the Piazza di Spagna and the fountain of the Barcaccia (barque), designed by the father of Bernini.

The **Piazza di Spagna,** which derives its name from the PALAZZO DI SPAGNA, the residence since the 17th century of the Spanish Ambassador to the Vatican, is another scene that people all the world over have known since childhood from pictures and photographs and have dreamed of some day seeing in the original. At the end of the eighteenth century and for a great part of the nineteenth, this quarter was the centre of artistic and intellectual life in Rome.

At one end of the piazza is the COLLEGIO DI PROPAGANDA FIDE designed by Bernini. This building is, to employ an expression of to-day, the « central headquarters » of one of the greatest forms of the universality of Rome, as it is from here that missionaries are sent forth for the propagation of the Roman Catholic faith in every corner of the world.

What we have said of the fame of the Piazza di Spagna can be repeated about the FONTANA DI TREVI, the most monumental and imposing fountain in Rome. The architecture of this fountain is due to Niccolò Salvi (18th century) who probably made use of a sketch by Bernini. It is a popular and very old tradition that visitors to Rome who, before departing, throw a small coin into the fountain, will some day return, and tourists religiously conform with this custom.

Turning to the **Via del Tritone,** one of the busiest thoroughfares of Rome, we come to **Piazza Barberini,** in the centre of which is the celebrated FONTANA DEL TRITONE, another of the many admirable creations of Bernini. Above the piazza is the PALAZZO BARBERINI, the construction of which was begun under Urban VIII. The lateral portions of the building were designed by Maderna; the two central windows of the three storeys are due to Borromini, while the other portions in the centre and at the side are the work of Bernini, who completed the building of the palace. This is one of the most imposing and magnificent palaces of Baroque Rome.

From Piazza Barberini opens the wide **Via Vittorio Veneto,** the most fashionable thoroughfare in Rome. After admiring the modern **Ludovisi Quarter,** we should visit the imposing monumental remains of the BATHS OF DIOCLETIAN (305 A.D.), the most extensive of the ancient « thermae » of Rome. They cover an area of 391 by 347 yards and afforded accommodation for over three thousand bathers.

On the ruins of the « tepidarium » of these baths, Michael Angelo built the church of SANTA MARIA DEGLI ANGELI, subsequently altered by Vanvitelli in 1749. The remaining parts of the grandiose ruins of the Baths of Diocletian were transformed by Michael Angelo into a Carthusian Convent, which

is to-day occupied by the MUSEO NAZIONALE DELLE TERME. Among the many other invaluable treasures contained in this Museum are the principal fragments of the « Ara Pacis Augustae », the beautiful « Venus of Cyrene », the « Ludovisi Throne » or « Throne of Aphrodite », « Mars resting », the « Daughter of Niobe » from the Gardens of Sallust, the « Fasti Praenestini », the « Venus Genetrix », the « Resting Pugilist », « Venus at the Bath », and the celebrated « Maiden of Antium ».

Leaving the Museum, we come to the beautiful **Piazza dell'Esedra,** which welcomes all travellers as they leave the station, and then, entering the **Via Nazionale,** we will go as far as the **Piazza del Quirinale.** In the centre of this square are a fountain with a basin of granite, an obelisk brought here from the Mausoleum of Augustus in 1787, and two colossal statues of Castor and Pollux, formerly erroneously attributed to Phidias and Praxiteles.

The PALAZZO DEL QUIRINALE which stands in this square was begun under Gregory XIII. in the sixteenth century as a summer residence for the Popes; it was continued by Sixtus V. who died there, and finished by Clement XII. (18th century).

The Quirinal has been the scene of numerous conclaves and important ceremonies — it was from its balcony that Pius IX. blessed the Italians in 1856 — and since 1870 it has been used as the Royal Palace. As the « Vittoriano » is the monumental symbol of Italy's achievement of unity, the Quirinal is, in a certain sense, the monumental symbol of Rome as Capital of Italy.

The men who succeeded the heroic patriots of the « Risorgimento » who conceived and achieved the independence and unity of Italy, were unable to understand the greatness of Rome as capital of Italy. But Benito Mussolini, in taking up the heirloom of past centuries, has given back to Rome, in spirit and in substance, its ancient supreme dignity. He has made of Rome the centre of a renewed European civilization and given to the « Urbs » all the splendour of a great and modern metropolis. Spontaneously and unanimously, the new and beautiful Rome that the world admires has been called the Rome of Mussolini. And in fact we have scarcely been able to advance a step on this rapid itinerary of ours without meeting the emblem of the Lictor, which has restored a new splendour and dignity to the many aspects of Rome.


The beach at Anzio

To enumerate the great number of works that the Duce has caused to be created for the greater glory of Rome and of Italy, works that will be attached to his name throughout the centuries, would almost be a repetition of what we have already said. Rome, the whole of Rome, in its architecture, its life of a great metropolis and in its eternal function of

« caput mundi », has been transformed by Mussolini; it has truly become the Rome of Mussolini.

But Fascism has not restricted its activities to the restoration and excavation of ancient treasures; it has also created many new and powerful expressions of Roman architecture.

We shall only mention two of these which, in their imposing size, their great significance and their architectural beauty, bear witness to the

adherence of Fascism to the eternal spirit of Rome. We speak of the Mussolini Forum and the University City.

The MUSSOLINI FORUM, designed by the architect E. Del Debbio in collaboration with various other architects and technicians, is the largest sports centre in Italy and one of the first in the world. As yet built only in part, when completed it will cover an area of about 850,000 square metres.

This Forum is truly worthy of the majestic creations of ancient Rome. It comprises the FASCIST ACADEMY OF PHYSICAL EDUCATION, the MUSSOLINI STADIUM capable of accommodating 20,000 spectators, the STADIO DEI CIPRESSI accommodating 100,000 persons, the great monolith of the Mussolini obelisk, and the large Swimming Pool. Along with other imperial fora, it will commemorate in future centuries the name of Mussolini and the glorious feats of this Roman Duce.

The UNIVERSITY CITY, the « Studium Urbis », designed by the architect Marcello Piacentini, Academician of Italy, in collaboration with other architects, occupies an area of 215,000 square metres, 40,000 of which are covered by buildings representing a volume of 700,000 cubic metres.

The monumental entrance, the Rectorate, the Library, the Aula Magna, and the grandiose and numerous edifices for the various Faculties which form the University City, are fine expressions of the severe architectural style of Fascist Italy.

The motto coined by the Duce: « Libro e moschetto fascista perfetto » (Book and gun, perfect Fascist), is a motto which, in its admirable conciseness, expresses one of the ideals of ancient Rome: that the exercise of body and mind, trained to fight the battles which inevitably accompany the achievement of high aspirations, are necessary to the perfect balance of the human faculty. The Mussolini Forum and the University City are concrete symbols of this motto, the significance of which was felt, on the occasion of the solemn inauguration of the University City, in the discourses of the Duce and the King of Italy, who vindicated in Rome and in the name of Rome, the solemn rights and duties which the « Urbs », in the present as in the past, is called upon to fulfil.

The She-Wolf
(Capitoline Museum)

THE SURROUNDINGS OF ROME

The beauty and grandeur of the Eternal City exercise such an irresistible fascination on the tourist that very often in his desire to enjoy up to the very last minute of his sojourn the innumerable marvels of Rome, he neglects to visit its surroundings. This happens mostly owing to the fact that few know of the many historical, artistic and natural beauties that abound in the environs of Rome.

There are magnificent beaches bordered by shady pine-woods where happy hours may be spent in an atmosphere of perfect tranquillity; there are smiling little towns and villages dotting the verdant hills that offer delightful views of green valleys and woods; there are small lakes which reflect in their waters the cobalt of the sky; mediaeval towns possessing artistic palaces or historic castles; mineral springs and thermal establishments that have proved very popular for the efficacy of their waters; most interesting excavations of Roman cities and innumerable monuments attesting to the power of ancient Rome; and finally, there are the reclaimed zones that are an eloquent proof of the constructive ability of Fascist Italy.

A network of roads that are considered among the most perfect in the world, and comfortable train, tram and motor-coach services connect Rome with all the most interesting localities of Latium.

SEASIDE RESORTS. The sea-coast of the Latium stretches from Civitavecchia in the north down to the Gulf of Gaeta, and abounds in charming little towns with delightful beaches.

CIVITAVECCHIA is an important port of communication with Sardinia and is equipped with good hotels and modern bathing establishments which attract a great number of people. It is 44 ½ miles distant from Rome, with which it is connected by the magnificent Via Aurelia. There is also a frequent railway service, Civitavecchia being a station on the Rome-Pisa-Genoa-Turin line.

Following the Via Aurelia southwards, at a short distance from Civitavecchia one finds SANTA MARINELLA and LADISPOLI, two small towns which during the summer season are very popular as seaside resorts among the Romans. Soon after Ladispoli the Via Aurelia turns in from the coast and reaches « Ponte Tre Denari », where the road for Maccarese and Fregene commences. FREGENE is one of the most beautiful beaches of the Latium, and possesses a truly magnicent pine-wood. Further south are FIUMICINO and LIDO DI ROMA. The former lies at a distance of about 18 miles from Rome and is reached by way of an excellent road.

number of excellently equipped hotels and pensions with which it is provided, contribute to make of this watering-place a favourite holiday resort.

Continuing along the Via Prenestina, one reaches FROSINONE, an important centre beautifully situated on the summit of a hill, dominating an extensive view over the plain and the surrounding hills and mountains. Like Fiuggi, Frosinone is also connected with Rome by a comfortable and rapid electric railway service, leaving Rome from Viale Principe di Piemonte, next to the central railway station.

TIVOLI AND SUBIACO. Leaving Rome by the Porta San Lorenzo and following the Via Tiburtina for about 12 miles, one comes to the sulphur-baths of « Acque Albule » which are provided with up-to-date swimming pools. A little more than one and a half miles further on is the « Tomb of the Plautii », a well-preserved cylindrical tower of the Augustan period, and two miles further still Hadrian's Villa, the largest and richest villa in the Roman Empire A fine road climbs the olive-clad hillside to TIVOLI, a most picturesque town situated at the extremity of the Aniene Valley. The waterfalls of the river Aniene, the Roman Temple of Vesta and the celebrated Villa d'Este, as well as the magnificent panorama obtained over the Roman Campagna, make a visit to Tivoli one of the most interesting and attractive excursions in the whole of Latium.

Proceeding southwards from Mandela, one can reach SUBIACO, celebrated for the two convents of St. Scholastica and St. Benedict. From Subiaco one can go to Frosinone, passing through Guarcino and Alatri.

RIETI AND THE TERMINILLO. Following the Via Salaria and passing on the way the Littorio Airport, after about 20 miles one comes to Passo Corese. The Via Salaria continues thence northwards to Terni, but a turning to the right leads to RIETI, a charming little town with an important Civic Museum. From Rieti a magnificent motor-road runs to MONTE TERMINILLO, known as the « Montagna di Roma » or « Mountain of Rome » (7260 feet). The Terminillo is considered amongst the best winter sports centres of Italy and is provided with an excellent hotel.

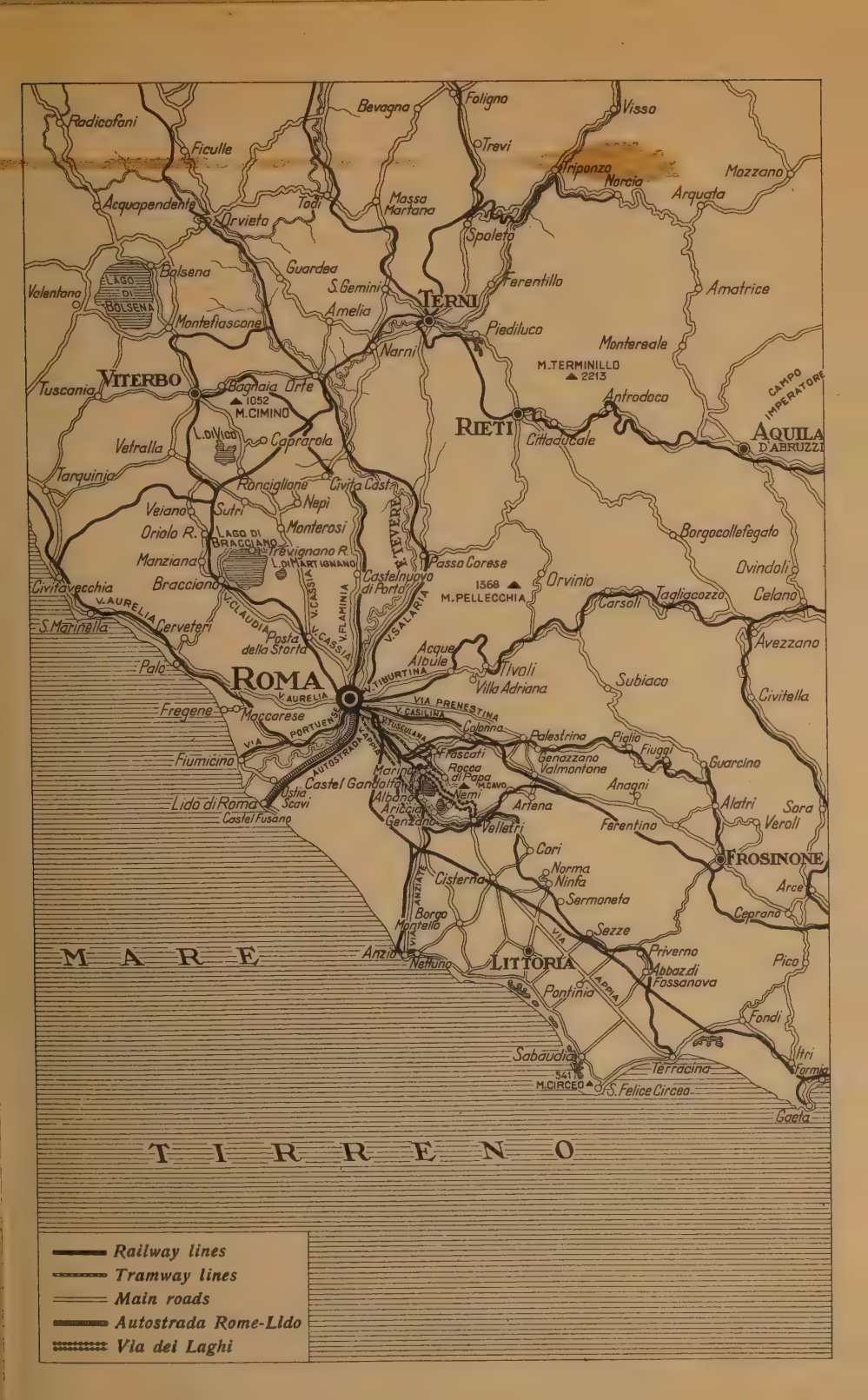
VITERBO AND THE LAKES OF THE UPPER LATIUM. Viterbo can be reached by way of the Via Cassia which runs alongside the LAKES OF BRACCIANO, VICO and MARTIGNANO. To reach Bracciano, however, a deviation should be made at « La Storta » into the Via Claudia. BRACCIANO is a town of some importance, picturesquely situated above the lake and of interest on account of its historic Orsini castle.

The other road, instead, passes the small lake of Martignano and continues on to MONTEROSI whence, deviating eastwards, it reaches NEPI and, further on, CIVITA CASTELLANA, a picturesque little town situated on a high tufa plateau. From Civita Castellana a delightful excursion can be taken to Monte Soratte.

Returning to the Via Cassia at Monterosi, after passing through RONCIGLIONE and alongside the Lake of Vico and at the foot of Monte Cimino, one reaches Viterbo.

VITERBO has preserved its mediaeval character. The centre of the town is the Piazza della Cattedrale with the Loggia of the Palace of the Popes, the Cathedral and its Campanile, but everywhere one finds beautiful buildings and artistic works, such as the handsome fountains that are a characteristic feature of Viterbo and the picturesque mediaeval houses with their quaint windows, stairways and arches.

The Thermae just outside the town are provided with a fine swimming pool. Proceeding beyond Viterbo, one comes to the LAKE OF BOLSENA whose quiet shores are ideal for fishing and shooting.


Radicofani
Ficulle
Bevagna
Foligno
Visso
Trevi
Triponzo
Norcia
Mozzano
Arquata
Acquapendente
Orvieto
Todi
Massa Martana
Spoleto
Bolsena
LAGO DI BOLSENA
Valentano
Guardea
S. Gemini
Terni
Farentillo
Amatrice
Amelia
Montefiascone
Narni
Piediluco
Monteleale
M. TERMINILLO
2213
Viterbo
Tuscania
Bagnaia
1052
M. CIMINO
Orte
Antrodoco
CAMPO IMPERATORE
Rieti
Cittaducale
Aquila D'ABRUZZI
L. DI VICO
Caprarola
Vetralla
Tarquinia
Ronciglione
Civita Cast.
Nepi
Veiano
Sutri
Oriolo R.
LAGO DI BRACCIANO
Monterosi
Borgocollefegato
Manziana
Trevignano R.
L. DI MARTIGNANO
Passo Corese
Ovindoli
Civitavecchia
Bracciano
Castelnuovo di Porto
1368
M. PELLECCHIA
Orvinio
Tagliacozzo
Celano
V. AURELIA
V. CLAUDIA
V. CASSIA
V. FLAMINIA
V. SALARIA
Carsoli
S. Marinella
Cerveteri
Posta della Storta
Avezzano
Palo
Acque Albule
Tivoli
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V. TIBURTINA
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Ceprano
Borgo Montello
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Pico
M A R E
Anzio
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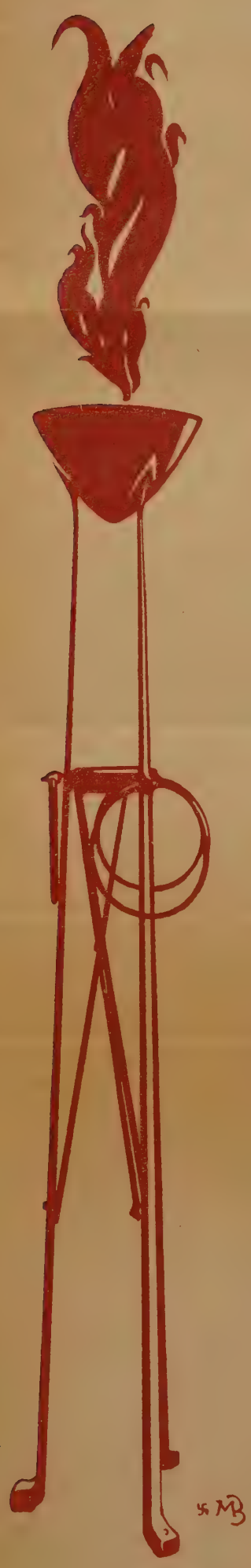
PIZZI & PIZIO - MILANO-ROMA

VLPIA

FILIPPO MORETTI * ROMA



ANTIPASTI: MISTI — PROSCIVTTO
SALMONE — CAVIALE

MINESTRE: CAPPELLETTI IN BRODO
CREMA — TAGLIATELLE
SPAGHETTI — AGNOLOTTI

VOVA: AL-BVRRO — COCQVE
AL-BACON — OMELETTE COMPOSTA

PESCE: SPIGOLA-BOLLITA — SOGLIOLE
FRITTO-DI-TOTANI — FILETTI-DI-BRANZINO

FRITTVRE: MISTA-ALL'ITALIANA
COTOLETTA - MILANESE

SCALOPPINE AL PROSCIVTTO
LOMBATE-PIZZAIOLA
-POLLO-ROMANA-CON-PEPERONI
COSTOLETTE-ALLA-GRIGLIA
FILETTO - DI - BVE

VIVANDE-FREDDE: LINGVA ~ PROSCIVTTO COTTO
TACCHINA NOVELLA ~ PATE-DI-CACCIA: GALANTINA
TERRINA-DI-FOIE-GRAS:

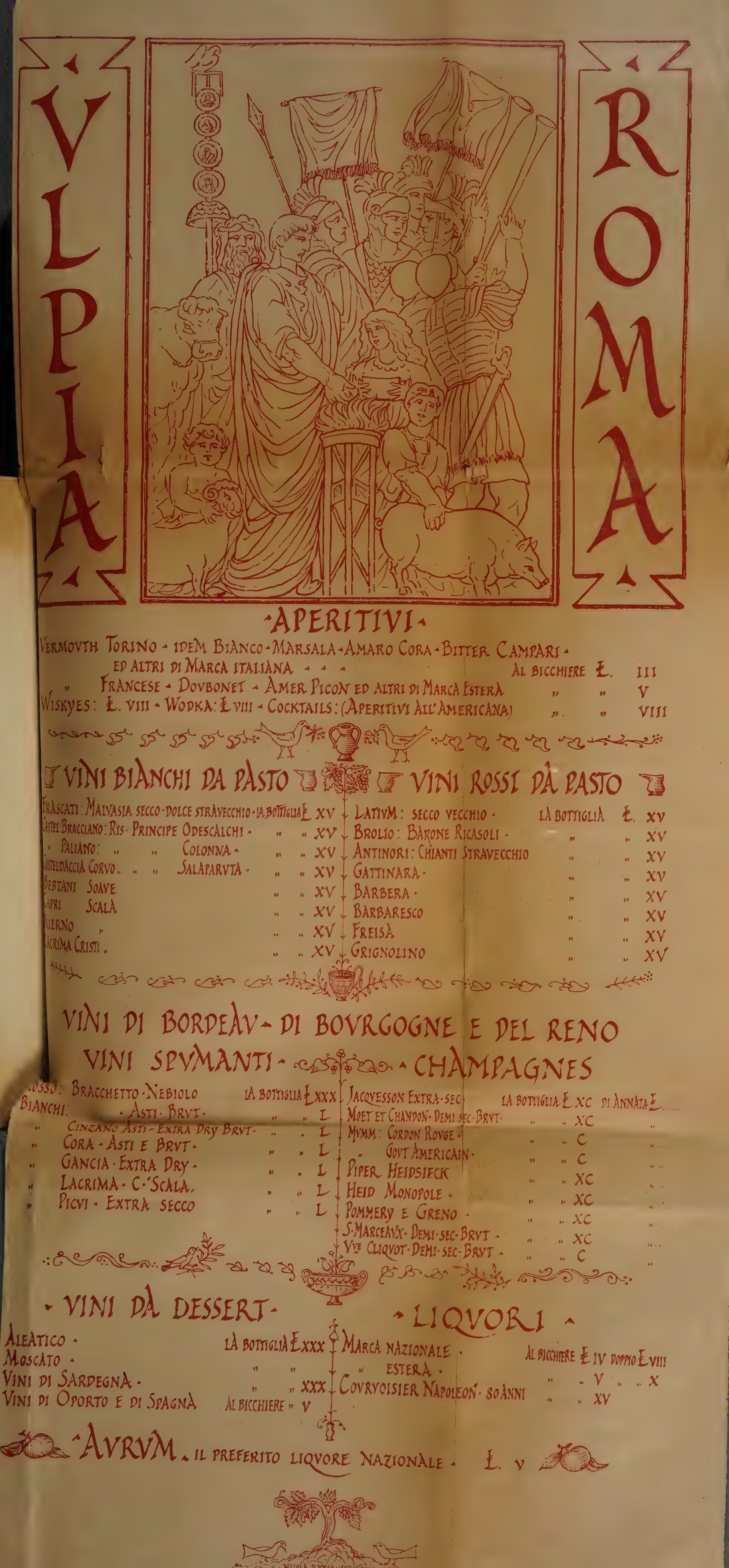
VERDVRE-E-LEGVMI-DI-STAGIONE: AL BVRRO

DOLCI: ASSORTITI — CON PANNA

FORMAGGI

COMPOSTA DI FRVTTA — MACEDONIA DI FRVTTA
FRVTTA DI STAGIONE

STABILIMENTI ALTEROCCA - TERNI


VLPIA
ROMA
APERITIVI
VERMOUTH TORINO - IDEM BIANCO - MARSALA - AMARO CORA - BITTER CAMPARI - ED ALTRI DI MARCA ITALIANA - - - AL BICCHIERE £. III
" FRANCESE - DOUBONET - AMER PICON ED ALTRI DI MARCA ESTERA " " V
WISKYES: £. VIII - WODKA: £ VIII - COCKTAILS: (APERITIVI ALL'AMERICANA) " " VIII
VINI BIANCHI DA PASTO
FRASCATI: MALVASIA SECCO - DOLCE STRAVECCHIO - LA BOTTIGLIA £ XV
CASTEL BRACCIANO: RIS - PRINCIPE ODESCALCHI - " " XV
" PALIANO: " " COLONNA - " " XV
CASTELDACCIA CORVO " " " SALAPARUTA - " " XV
BERTANI SOAVE " " XV
CAPRI SCALA " " XV
FALERNO " " " XV
LACRIMA CRISTI " " " XV
VINI ROSSI DA PASTO
LATIUM: SECCO VECCHIO - LA BOTTIGLIA £. XV
BROLIO: BARONE RICASOLI - " " XV
ANTINORI: CHIANTI STRAVECCHIO " " XV
GATTINARA - " " XV
BARBERA - " " XV
BARBARESCO " " XV
FREISA " " XV
GRIGNOLINO " " XV
VINI DI BORDEAU - DI BOURGOGNE E DEL RENO
VINI SPUMANTI - - CHAMPAGNES
ROSSO: BRACCHETTO - NEBIOLO LA BOTTIGLIA £ XXX
BIANCHI: - ASTI - BRUT - " " L
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" GANCIA - EXTRA DRY - " " L
" LACRIMA - C. SCALA " " L
" PICUI - EXTRA SECCO " " L
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MOET ET CHANDON - DEMI SEC - BRUT - " " XC "
MUMM: CORDON ROUGE - " " C "
" COUT AMERICAIN - " " C "
PIPER HEIDSIECK " " XC "
HEID MONOPOLE - " " XC "
POMMERY E GRENO - " " XC "
S. MARCEAUX - DEMI - SEC - BRUT - " " XC "
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VINI DA DESSERT
ALEATICO - LA BOTTIGLIA £ XXX
MOSCATO - " "
VINI DI SARDEGNA - " " XXX
VINI DI OPORTO E DI SPAGNA AL BICCHIERE " V
LIQUORI
MARCA NAZIONALE - AL BICCHIERE £ IV DOPPIO £ VIII
" ESTERA - " " V " " X
COURVOISIER NAPOLEON - 50 ANNI " " XV
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Minestre

Pastina in brodo	0 80
Cappellini all'uovo	1 20
Stracciatella	1 60
Zuppa di Verdura	1 20

Asciutte

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" Sugo Burro	2 50
Fettuccine all'uovo	3 00

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Capretto ai Ferri	4 20
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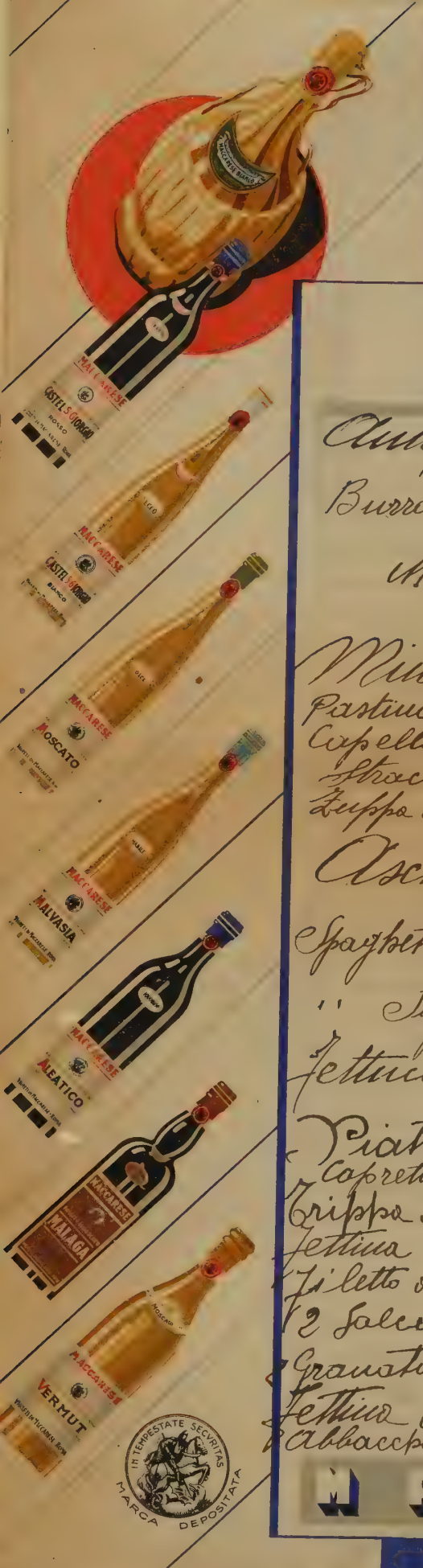
" " Piccola	5 00
Caffè	80

VINI DI MACCARESE



ANONIMA ZAFFERRI • PARMA

Pontine Marshes
(Consorgio Della Bonifica di Littoria)

It was only possible for me to spend about one-half day in this interesting place. The official publications give the detailed plans in regard to this work.

This area had long been a poorly drained swampy region, harboring malaria and supporting a poor uncertain agriculture. On the way out to the area we saw well drained land of poor quality due to the presence of a hardpan, reclaimed by deep plowing (Figure 64). I noted here that taxes on land

Figure 64. View of hardpan soil that is being broken by heavy plows seen on road to Pontine Marshes.

were based upon productivity and revised about every 50 years. These land surveys (cadestral) were begun in Lombardy when

it belonged to Austria and are not yet entirely completed. Much of the land in the Roman Compagnia laid wild until after the World War and is now being reclaimed by the use of the heavy steam plows at a cost of about 1,000 lira per hectare of which the government pays one-quarter.

Figure. 65. View of torrent channel at margin of Pontine Marshes.

Figure 66. Bridge near channel for torrents.

On the brief trip I noted several kinds of soil in this great plain. (1) Alluvial soils made up largely of old volcanic materials, now brown in color and with good structure. (2) Poorly drained, dark clay soils with concretions of precipitated calcium carbonate at about 1 meter depth. This soil has several phases according to (a) drainage; (b) content of organic matter, and (c) depth to lime. (3) Imperfectly drained soils from alluvial materials of the Planosol group, mottled in the lower part, heavy sandy clay, acid, and with an irregular massive structural condition. These soils are difficult to till and require lime, phosphate, and the use of leguminous green manures. (4) Sandy soils from dunes near the sea.

The new farms are about 10 to 20 hectares and planned for farm families. They have livestock (dairy), subsistence crops, wheat, sugar beets, etc. Flax is being tried, both for fiber and seed. The little houses, with stables, cost

Figure 67. New house in Pontine area.

about 35 to 60 thousand lira. These farms are arranged so that each 200 have a borough or central trading place.

The project can only succeed where a high degree of cooperation is maintained. There must be drainage and irrigation both for agriculture and mosquito control. The ditches

Figure 68. Rear view of house shown in Figure 67.

Figure 69. Inside barn shown in Figures 67 and 68.

will need constant attention to prevent them from becoming filled with weeds and grass. Beet sugar factories will need to be built according to the needs and production in the area. At present the leaders realize that a lack of cheap electric power is a great handicap. On the whole I believe this to be a good undertaking, probably uneconomic if considered by itself purely from the point of view of agricultural production. But it must be viewed from the national point of view and immediately the mosquito control phase is seen to be of far reaching value to Rome and the adjacent areas.

Figure 70. A view looking southwest over a portion of the Pontine.

Figure 71. A view south of Rome, near the Pontine.

It offers homes for people, increases the supply of home-grown food for the nation, and above all, capitalizes on the Italian people's love of the land.

CONSORZIO DELLA BONIFICA DI LITTORIA

NATALE PRAMPOLINI

LA BONIFICA IDRAULICA DELLE PALUDI PONTINE

ESTRATTO DAL VOLUME "LA BONIFICA DELLE PALUDI PONTINE"
DELL' ISTITUTO DI STUDI ROMANI

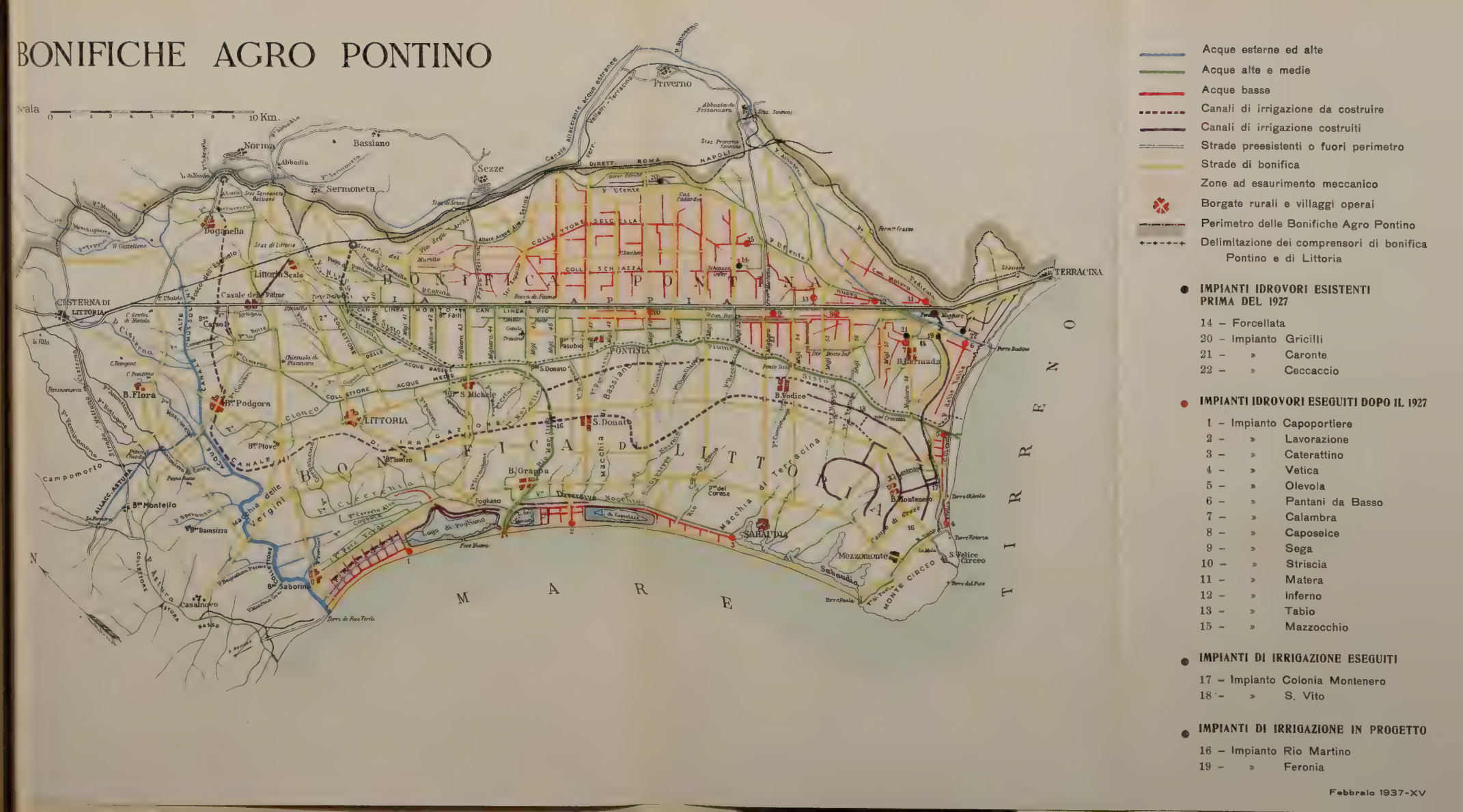
E. VERDESI -- ROMA -- TELEFONO N. 82-035

Anno 1937-XV - Enrico Verdesi - Roma - Telefono 82-035

NATALE PRAMPOLINI

LA BONIFICA IDRAULICA DELLE PALUDI PONTINE

BONIFICHE AGRO PONTINO



Febbraio 1937-XV

AGRO PONTINO

BONIFICHE DI I^A CATEGORIA

ESEGUITE PER CONCESSIONE DAI CONSORZI

CONSORZIO DI BONIFICA DI LITTORIA

E

CONSORZIO DELLA BONIFICAZIONE PONTINA

ROMA

LA BONIFICA IDRAULICA DELLE PALUDI PONTINE

Il 18 dicembre 1933, il Duce nel suo scultoreo discorso pronunciato a Littoria dal balcone di quel Municipio, disse fra l'altro:

« Questi troppo lunghi giorni di pioggia hanno collaudato i lavori di bonifica... Le acque dalle scoline ai canali minori e da questi ai canali maggiori defluiscono tutte al mare. Da questo punto di vista la battaglia è vinta in pieno... Si è parlato di un « miracolo di Littoria ». Non esistono miracoli: qui esiste il vostro lavoro, la vostra tenacia, la superba capacità dei nostri ingegneri e tecnici, la mia volontà e il risparmio del popolo italiano ».

Ricompensa maggiore non potevano sperare coloro che all'opera del risanamento idraulico dell'Agro pontino hanno dedicato fatiche, ansie, studi, fede, riuscendo a superare difficoltà di ogni sorta che la natura e gli uomini innalzavano loro avanti per ostacolarne il programma ad ogni piè sospinto.

Nota. — I dati numerici contenuti nel presente capitolo si riferiscono alla data (9 aprile 1934) in cui fu tenuta ai Corsi superiori di Studi Romani la conferenza del Sen. Prampolini, qui in gran parte riprodotta.

Nè le difficoltà riuscirono a fiaccarli, ma nemmeno ad indebolirli nella loro azione pervicace, perchè obbedivano ad un ordine ricevuto da Colui che aveva voluto che la palude pontina, per la quale furono vani per secoli i conati di Imperatori e Papi, fosse redenta per sempre.

Il merito di questa vittoria, che emula i fasti più grandi della nostra storia, va esclusivamente al Duce. A coloro che ne furono i materiali artefici resta la grande soddisfazione di italiani e di fascisti d'essere stati scelti come esecutori della Sua volontà.

Potevano essi solo temere che la loro opera restasse mutilata, se all'assicurato risanamento idraulico non fosse seguìta una bonificazione agraria che quelle terre risanate trasformasse con metodi nuovi, ed indirizzasse a mète più vaste.

L'avvento nell'Agro pontino dell'Opera Nazionale Combattenti fece svanire questi dubbi, ed ora la bonifica integrale di quell'immenso territorio è assicurata, poichè la poderosa opera dei combattenti è di esempio e sprone anche agli altri proprietari, molti dei quali hanno intrapreso la trasformazione fondiaria secondo le migliori direttive.

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Chi percorre oggi la via Appia, da Cisterna a Terracina, resterà meravigliato nel vedere sorte, come per incanto, dalla terra, che ancora nel 1931, e in parte anche fino allo scorso anno, era per due o tre mesi allagata, una serie infinita di ridenti case coloniche presso le quali ferve il lavoro di molti contadini di recente

importati da regioni ove la densità della popolazione agricola non permetteva più loro di essere utili a sè ed alla Nazione.

Ma la meraviglia diventerà ammirato stupore in chi, deviando a destra sulla strada che congiunge la stazione alla città di Littoria, vedrà pararglisi davanti questa nuova città che sorge ove ieri era la località « Quadrato » e che ebbe la sua consacrazione il 18 dicembre 1932; lo stupore crescerà in chi si spinge lungo la strada aperta fra acquitrini e foreste fino al Circeo, un tempo accessibile solo da Terracina per la strada litoranea; ove vedrà sorgere sulle sponde del lago di Paola, la nuova città di Sabaudia che è stata inaugurata all'augusta presenza dei Sovrani d'Italia.

Quali fossero le condizioni del territorio nel 1926, quando il Duce comandò la sua redenzione, non è più possibile figurarsi, poichè le opere ne hanno talmente modificato la configurazione, che anche ai più vecchi del luogo è facile smarrirsi.

Non più sparute file di magre cavalcature che portavano, dai paesi accoccolati sui Lepini, i febbricitanti lavoratori al piano spesso inondato, lungo impervi sentieri; ma possenti rombi di automezzi su ottime strade, ampie e diritte a perdita d'occhio, fiancheggianti campi dissodati da moderne trattrici che hanno sostituito l'arcaico aratro.

Restano alcune zone ancora, ove l'opera di bonifica già in pieno sviluppo sarà presto compiuta, in modo che il piano segnato dal Duce avrà nel 1935 il suo essenziale compimento.

Per valutare quale sia stato lo sforzo dei Consorzi di bonifica

ai quali è affidata la esecuzione delle opere di competenza statale nell'Agro pontino, esteso ben 77.000 ettari, conviene raffigurarci le condizioni del territorio al 1924, avanti l'inizio dei lavori.

L'Agro Pontino, cioè la vasta ondulata pianura che si distende fra il piede dei monti Lepini ed Ausoni da Cisterna a Terracina ed il mare Tirreno, dalla foce della Astura al porto di Terracina, è diviso in due Comprensori dal fiume Ninfa-Sisto: il primo della Bonificazione Pontina propriamente detta si estende in sinistra del Ninfa-Sisto fino al piede dei monti, e comprende la parte più depressa e tristemente famosa nei secoli per estensione di paludi e malsania d'aria. La sua superficie è di circa 27.000 ettari.

Il secondo Comprensorio detto di Piscinara, alla destra del Ninfa-Sisto, recinge il primo come una vasta fascia con terre relativamente alte, ma cosparse di avvallamenti detti « piscine », dalle quali ne è derivato il nome; la sua superficie è di 50.000 ettari.

Nel Comprensorio pontino furono molti i tentativi operati per il suo riconoscimento, ma gli effetti non furono duraturi, ed il territorio non venne mai bonificato. Mancava una visione totalitaria dei problemi da risolvere, e le opere non furono mai coordinate nelle loro complessità ed interferenze, onde i risultati furono spesso mancanti oppure tali da non potersi mantenere, perchè le azioni distruttive della natura non potevano essere validamente contrastate dalle deboli forze degli agricoltori abbandonati a loro stessi, ed anche e principalmente perchè nel territorio non venne mai instaurata una conduzione agricola che dalla conservazione delle opere idrauliche eseguite traesse i mezzi per il suo sviluppo.

Nessuno stimolo poteva venire dalla economia primitiva di quelle ubertose contrade, non a migliorare ma a mantenere le opere eseguite per il miglioramento idraulico del territorio, finchè in esso si mantenevano devastatrici mandre di animali e specialmente di bufali, che rovinavano i canali nei quali si adagiavano per trovare refrigerio dalla canicola.

E la mancata stabilizzazione sul territorio di coloni fu altra causa di decadimento. Infatti, quale può essere l'interesse del pastore che sfrutta il pascolo invernale col suo gregge, che porterà a maggio in montagna, a conservare canali ed a mantenere argini?

E così dicasi del falciatore dei maggesi e del mietitore del grano, che cercherà di sfuggire dal piano prima che la febbre lo stronchi.

Il successo tecnico delle bonifiche del Veneto e dell'Emilia è dovuto al fatto che non appena quei terreni furono prosciugati, vennero invasi dai provetti agricoltori che vivevano ai margini della palude, e questa trasformarono a somiglianza della terra dalla quale provenivano.

La viabilità nel territorio pontino era rappresentata dalla via Appia che andava spesso sommersa in più punti, e dalla quale si staccavano le provinciali per Norma, Sezze e Priverno: da Terracina un tronco allacciava ad essa San Felice Circeo: poche carrarecce a fondo naturale, praticabili solo nella stagione estiva, completavano la rete stradale della zona e fornivano malagevole svuoto ai terreni nei quali forzatamente permaneva un primitivo sfrutta-

mento a base pastorale, il solo consentito dalle estese e frequenti inondazioni che permanevano per lungo periodo dell'anno.

Causa principale di questo disordine idraulico era il rovinoso precipitare delle acque dalle montagne circostanti a ristagnare in pianura, dove vi si aggiungevano quelle scaturite dalle copiosissime sorgenti pedemontane.

Lentissimo ne era lo smaltimento per cavi insufficienti che, attraversando terreni di grande instabilità ed inconsistenza, erano spesso inofficiosi per le frane che in essi avvenivano, e per lo sprofondarsi degli argini e dei manufatti che il terreno molle non poteva sorreggere.

In una vasta zona attraversata dall'Uffente, lo strato di torba e di limo fluido supera i 60 metri di profondità, e gli argini di questo corso d'acqua vengono ogni anno ricaricati con terra mista a fascine, ed ogni anno, regolarmente se pure lentamente, ingoiati.

L'asciugamento del terreno ricchissimo di sostanze organiche che, per l'azione dell'aria si ossidano e si distruggono, dà luogo a costipamenti e cali notevolissimi e tali da rendere nulli gli effetti delle opere di bonifica tentate per il passato. In alcune zone messe recentemente all'asciutto, si è riscontrato in tre anni un calo di oltre 40 cm.

I fenomeni di filtrazione attraverso i terreni torbosi assumono manifestazioni cospicue; a lievi intumescenze dei canali corrispondono notevoli allagamenti.

Per un bacino di 700 ettari costeggiante il canale Linea lungo

la via Appia, abbiamo verificato una introduzione di acqua di oltre 800 litri al secondo.

Altra causa di decadimento è quella dovuta alla vegetazione delle erbe palustri nei canali, favorita dalla costante clemenza del clima e dalla alta temperatura delle acque di sorgente, per la quale si ha nei periodi più caldi dell'anno, un incremento di livello di oltre 5 cm. al giorno. Accadrebbe facilmente la debordazione dei canali se una accurata opera di diserbamento non intervenisse ad attivarne il corso.

Per il passato questa bisogna era affidata a mandre di bufali che, cacciati e mantenuti a forza nei canali e costretti a percorrerli, annaspando nel fondo, strappavano con le unghie le erbe.

Ora diserbatrici meccaniche montate su scafi galleggianti provvedono ogni quindici giorni a mantenere sgombri i canali.

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Per il Comprensorio di Piscinara nulla nel passato si era fatto: solo alcune soluzioni erano state proposte e dettero luogo ad accanite discussioni.

Il suo disordine idraulico nelle zone pianeggianti contigue al Comprensorio pontino, era aggravato dall'esistenza delle opere di difesa di questo, le quali, rivolte sopratutto a proteggere ed a scolare le paludi pontine propriamente dette, prolungavano gli allagamenti ed i ristagni nel piano di Piscinara. Sopratutto l'insufficienza dell'alveo del Ninfa-Sisto e la arginatura di questo in sini-

stra ostacolavano lo smaltimento delle acque che dai monti Lepini per il Teppia ed il Cisterna, impedite di spagliare in sinistra, precipitavano ad impaludare il territorio di destra stagnando per lungo tempo nei fertili campi di Piscinara bassa.

La maggior parte del territorio di Piscinara è formato da un dosso alto che, partendo dalle ultime propagini dei colli Albani presso Cisterna, va lentamente degradando verso il Circeo.

Tolta la zona presso Cisterna ove uno sfruttamento agricolo saltuario era in atto, il resto, intersecato da forre formate dalla erosione delle acque, era fino a pochi anni fa coperto di boscaglie che in certi punti prendevano il nome di selva. Impraticabile in tutta la sua estensione, mancando assolutamente di strade, attraversato da striscie cospicue di paludi, ospitava pochissimi lavoratori che nell'inverno si stabilivano nella località per i lavori agricoli di piccoli appezzamenti di terreno, o per i tagli dei boschi, abitando in capanne caratteristiche poste al centro di un recinto chiamato « lestra ». Di questa il ricordo sta per sparire,

Ad occidente di questa zona limitata a sud e ad ovest dal mare, per un lungo tratto giace una striscia depressa in certi punti al di sotto del livello del mare, incisa dai laghi litoranei di Fogliano, dei Monaci, di Caprolace, di Paola: fra di essi larghe estensioni di acquitrini a fondo melmoso a volte di notevole spessore, sui quali è pericoloso addentrarsi potendo essere inghiottiti: si dice che molto bestiame abbia trovato in essi sepoltura. In questa zona in corso di risanamento, le condizioni igieniche erano tali da far fuggire al principio di giugno tutta la popolazione.

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Lungo sarebbe raccontare le vicende dei progetti di sistemazione delle due bonifiche e sarebbe inutile dire delle accanite discussioni cui essi dettero luogo.

Come si vede, poco o nulla di efficace si era fatto non perchè coloro che furono preposti al loro studio fossero insufficienti al compito, ma perchè alle loro conclusioni mancava una seria e fondata base di fatto.

Mancanti quasi del tutto, e quel che è peggio errati, i rilievi altimetrici del terreno, fino al 1926 i lavori si basavano su una livellazione del 1862, fatta eseguire dal Pontefice! Sconosciuta era la natura del suolo e del sottosuolo, ed ignota la idrografia del territorio.

La portata delle sorgenti che scaturivano a pié dei monti da Ninfa a Terracina, non era conosciuta e si riteneva esatta quella che ebbe a stabilire nel 1815 il De Prony, incaricato della soluzione del problema da Napoleone.

Accertate queste manchevolezze si procedette ad un rilievo del territorio, affidando l'esecuzione di un piano quotato in scala al 5.000 con curve di livello equidistanti mezzo metro, all'Istituto Geografico Militare, che appoggiò i suoi lavori ad una livellazione di precisione. Questo piano quotato rivelò le ragioni di parte degli insuccessi di chi si accinse, per il passato, alle opere di redenzione della palude: estesi territori ritenuti sopra il livello del mare risultarono ad esso soggetti: e si accertò l'insufficienza di alcuni

impianti idrovori, costruiti per il passato, a scolare bacini più ampi di quanto si era previsto.

La più diligente cura fu data allo studio della durata e della intensità delle pioggie, al comportamento delle piene ed alla portata ed al regime dei corsi di acqua, e quale in essi fossero l'influenza della vegetazione delle erbe fino allora trascurata, o insufficientemente valutata.

La portata delle sorgenti che si riteneva in base ai dati forniti dal De Prony, come ho detto sopra, in 44 mc. al secondo, fu trovata, dopo sistematiche misure durate un biennio, di soli 20 mc. Tale quantitativo è ancora cospicuo e potrà dare notevoli frutti con una razionale distribuzione per l'irrigazione alla quale non si era mai adeguatamente pensato; chè anzi le opere erano studiate per inviare al più presto al mare con le acque dannose di piena anche quelle di sorgente che potevano, addotte ai campi, temperare gli estivi ardori.

Non era previsto un distinto sistema di canalizzazione dal pié dei monti al mare per le acque che precipitavano dai monti durante le pioggie torrenziali invernali e primaverili, provocando oltre l'interrimento dei canali per le torbide convogliate, straripamenti ed inondazioni.

Una indagine accurata, con innumerevoli saggi gegnostici, ci fece conoscere la natura e solidità, dei terreni per stabilire l'entità dei presidii da adottare per la stabilità delle opere da eseguire, e per tracciare l'andamento dei canali nuovi, e le deviazioni e rettifiche dei vecchi.

Vagliati alla più severa critica tutti i dati raccolti si è proceduto, per i due Comprensori, all'allestimento del piano esecutivo delle opere necessarie per il completo risanamento e per la messa in valore dei terreni.

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Prima cura del Consorzio di Piscinara fu quella di sottrarre le parti più basse del suo Comprensorio alla soggezione delle acque che precipitavano dai monti e che in esse impaludavano per lungo periodo dell'anno. È stato aperto un canale di gronda lungo 37 km. che ha origine sotto Sermoneta, raccoglie tutte le aque della costa montana con un grande arco verso ovest, indi va ad immettersi nel Moscarello che è diretto al mare a Foce Verde; così si è liberata la pianura dalle acque estranee, compiendo il maggior passo per il risanamento del territorio.

Questo grande canale che il Duce ha consentito si chiamasse col Suo nome, oltre alle acque di un bacino montano di 29.000 ettari, riceve le acque di 9.600 ettari incluse nel Comprensorio. La sua sezione va via via aumentando in relazione agli afflussi che in esso hanno recapito ed è stata calcolata per una portata di 410 metri cubi al 1".

In esso potranno trovare recapito anche le acque di una estesa zona di oltre 13.000 ettari, tributaria della Astura, mediante un diversivo in corso di costruzione che faciliterà il risanamento di tutta la zona bassa posta in destra del Moscarello formante la parte inferiore della Astura.

Il territorio di Piscinara sotteso al Canale Mussolini, è stato diviso in due zone: l'una delle medie, l'altra delle acque basse, separate appunto dal Canale delle Acque Medie che ha origine presso la stazione di Sermoneta-Bassiano, si dirige verso Littoria, indi costeggia il piede orientale della duna quaternaria sino all'incontro con la trincea del Rio Martino che investe, sfociando in mare fra i laghi di Fogliano e dei Monaci.

La zona bassa, solcata nei punti più depressi da canali collettori che si riuniscono in località « Congiunte », ha per emissario il fiume Sisto che, abbandonato il fiume delle Volte che lo portava a sfociare in mare a Badino, va direttamente al mare mediante l'apertura di una nuova foce, difesa al suo sbocco da moli guardiani. Nel suo corso lungo 27 km. il Sisto, ampliato ed approfondito, riceve in destra tutte le acque del versante orientale della duna quaternaria.

Il versante occidentale di questa duna, che versava le sue acque nella zona litoranea aggravandone le condizioni, invia mediante appositi canali costruiti al piede di essa, le acque proprie nel collettore delle acque medie proveniente dal Rio Martino che le immette direttamente in mare.

La duna quaternaria cosparsa di piscine e tagliata in ogni dove da profondi fossi che nella loro parte inferiore stagnano in in estesi pantani, ha richiesto un'opera gigantesca di sistemazione, resa indispensabile dalla utilizzazione agricola in atto; la natura dei terreni prevalentemente sabbiosi, la grande acclività di essi, poichè da una quota anche di 40 mt. in breve percorso si arriva al

livello del mare, hanno obbligato a presidiare le opere con infinite briglie in muratura ed a rivestire lunghi tratti di canali per assicurarne la stabilità. Lo sviluppo di questi fossi è di oltre 700 km. Questa cifra dà la misura della mole del lavoro che è in corso di ultimazione.

Resta ora da esaminare quali siano le provvidenze adottate per la sistemazione delle zone litoranee importanti per la loro estensione e per la accentuatissima malaricità.

Dallo sbocco in mare del Canale Mussolini a Foce Verde, lungo il litorale fino al Circeo, esiste una zona depressa per gran parte sotto il livello del mare. In essa trovansi i laghi di Fogliano, dei Monaci, di Caprolace e di Paola, i cui bordi, ad eccezione di quello di Paola, a leggero declivio, erano allagati per notevoli estensioni ad ogni lieve intumescenza.

Sollevata, come si è detto, la zona litoranea dal recapito in essa delle acque provenienti dalla duna, si è provveduto al suo risanamento, coprendo la zona acquitrinosa con colmata artificiale e sussidiando questa con impianti idrovori che assicurano il recapito delle acque nel mare anche a marea di tempesta.

I laghi poi si stanno sistemando (Fogliano è completo) scavandone il bordo e rifluendo in colmata il materiale di scavo sui terreni circostanti per dare ad essi una sopraelevazione tale da metterli al sicuro da ogni allagamento. Le sponde dei laghi sottoposte a venti dominanti saranno difese dalla azione corrosiva delle onde, mediante rivestimenti in muratura.

Il pantano che andava da Foce Verde a Fogliano è comple-

tamente colmato e l'impianto idrovoro che lo serve è già da tempo in funzione. In questa zona fino a ieri impraticabile, sono già sorte le case coloniche e in quest'anno si avranno già i primi prodotti delle colture in atto.

Dei laghi di Monaci e di Caprolace è già cominciata la sistemazone che alacremente sarà condotta a termine. I terreni posti fra questi laghi stanno per avere il loro assetto definitivo.

La sistemazione della sponda del lago di Paola sta per essere finita.

Dal Circeo alla nuova foce del Sisto due bassure pantanose (Vetica ed Olevola) sono state colmate e, sussidiate da due piccoli impianti idrovori, potranno essere messe ora a coltura.

Riassumendo, le opere di Piscinara provvedono all'allacciamento delle acque di un bacino esterno di 26.000 ettari che, con la deviazione del bacino alto che ha recapito nella Astura, potrà arrivare a 40.000 ettari ed al riassetto idraulico del bacino interno di 50.000 ettari, dei quali 9.600 affluiscono al collettore d'acque alte, 23.400 ai collettori d'acque medie, 12.000 al fiume Sisto e circa 5.000 costituiscono le zone litoranee risanate con colmate e con impianti idrovori, come è detto poc'anzi.

Contemporaneamente alle opere di prosciugamento, il Consorzio di Piscinara ha studiato il problema dell'integrazione delle scarsissime risorse irrigue esistenti nel Comprensorio, concordando col Consorzio Pontino, il cui territorio è invece ricco di acque che sgorgano dalle numerose sorgenti ai piedi dei monti, una utilizzazione comune delle disponibilità complessive, per cui il Consorzio

Pontino cede a quello di Piscinara la parte esuberante ai suoi bisogni.

La distribuzione primaria di acque irrigue verrà effettuata mediante canali di gronda per la pianura sotto Cisterna, e di cresta per la duna quaternaria fra Littoria ed il Circeo, alimentati da acque derivate dagli emissari delle sorgenti del lago di Ninfa, dalle sorgenti sotto Sermoneta a monte della direttissima Roma-Napoli e dal collettore generale pontino (fiume Portatore) a pochi chilometri dal mare, sollevate a mezzo di appositi impianti di elettropompe.

Questa a grandi linee la sistemazione idraulica della Bonifica di Piscinara, il cui compito sarà presto ultimato.

Prima di passare ad analoga esposizione riguardo alla Bonifica Pontina accennerò alla sistemazione della viabilità, che fu il primo problema sottoposto alla risoluzione dei Consorzi poichè, come ho detto, all'infuori della via Appia che attraversava il territorio e che andava spesso sommersa, e delle diramazioni per Ninfa, Sezze, Priverno e San Felice Circeo, tutte allora assai mal tenute e malagevoli, nessun'altra strada ghiaiata esisteva nell'Agro.

Il piano stradale studiato dai Consorzi in piena armonia fra di loro, prevedeva ben 500 km. di nuove strade che sono già quasi interamente compiute, mentre nelle zone di più intenso appoderamento si è dovuto provvedere a un'ulteriore intensificazione della rete.

Oggi tutta la pianura è solcata da una rete stradale che ha permesso di mettere in valore in un brevissimo tempo un vasto

territorio, consentendo il trasporto di tutti i materiali occorrenti alla costruzione degli edifici, per l'appoderamento e per il sorgere di Littoria e di Sabaudia.

*
* *

La Bonifica pontina presentava problemi idraulici più complessi e delicati di quella di Piscinara anche per la necessità del coordinamento e della transizione fra le sistemazioni e gli ordinamenti costituiti per effetto delle antiche opere e quelli delle direttive odierne.

A Piscinara nulla era stato tentato per il passato, e quindi il problema da risolvere pure formidabile non era stato pregiudicato da nessuna opera. Nella Pontina invece da lungo tempo si erano eseguiti molti lavori che ingombravano e difficoltavano l'adozione delle nuove e più sicure misure di risanamento.

Si aggiunga che, mentre il territorio di Piscinara all'infuori delle zone litoranee, ha terreni solidi e di sicura stabilità, quello pontino ha larghe zone torbose e terreni inconsistenti, la cui natura rende difficile la costruzione e la conservazione non solo dei manufatti, ma anche dei canali.

Per ciò che riguarda la sistemazione idraulica, anche per questo Comprensorio era necessario assicurare la difesa dalle acque di provenienza montana che, mal contenute dagli alvei torrentizi attraversanti il territorio basso, vi provocano frequenti rotte ed allagamenti. La sistemazione del principale di questi alvei di pia-

nura, l'Amaseno, è ultimata ed i terreni antistanti ne risentono già in pieno i benefici effetti.

In questo alveo sistemato sarà immesso il canale di cinta, analogo a quello costruito per le acque esterne di Piscinara, destinato a liberare i canali di bonifica del piano dalle acque dei torrenti e delle pendici dei Lepini affacciantisi alla pianura.

Quanto alle acque interne, si è diviso il territorio in bacini a seconda della altimetria e del recapito, separando le acque in alte e basse: le alte per un territorio esteso in totale 12.000 ettari fra la sinistra e la destra della via Appia, avranno recapito rispettivamente nell'Uffente sistemato, e nel canale Botte modificato nel suo vecchio corso in due tratte, dove attraversava zone molto depresse, e per le quali non poteva servire.

Le acque dei terreni bassi, di circa 15.000 ettari da scolare meccanicamente, faranno capo ad opportuni impianti idrovori, molti già funzionanti e tutti da attivare entro il corrente anno. Questi impianti in numero di 14 hanno una portata complessiva di 60 mc. al minuto secondo e portata singola da uno a 35 mc. L'ultimo si sta costruendo in località Mazzocchio e servirà quasi 9.000 ettari, di cui la parte più depressa denominata « Quartaccio » sarà con la fine del corrente anno, liberata per sempre dal periodico allagamento invernale. Così l'ultima vestigia di palude nel territorio pontino sarà sparita.

Al prosciugamento, specie delle zone torbose, non potrebbe seguire la trasformazione fondiaria e la riuscita di colture redditizie, ove non si provvedesse alla irrigazione, per la quale come ho

accennato, il Comprensorio pontino propriamente detto è dotato di larghe risorse.

I collettori principali di acque alte, che già convogliano al mare le acque di tali sorgenti, saranno con una razionale disposizione di chiaviche di presa e di canali derivatori, intensificando l'embrionale sistema odierno, utilizzati come distributori principali di acque irrigue ai terreni bassi da essi collettori dominanti.

A rendere definitivi e ad assicurare i risultati della bonifica pontina, occorreranno altre diverse opere, meno urgenti ma necessarie e previste nel programma già concretato; esse sono, oltre al canale di cinta pedemontano già citato, la sistemazione della foce a mare e l'ampliamento dell'emissario generale che vi fa capo, un sistema di cabine e linee elettriche che assicuri da più sorgenti l'alimentazione degli impianti idrovori, ed opere complementari per lo scolo e la viabilità minore.

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* *

Da quanto precede si può arguire la mole e la complessità dei problemi teorici e pratici che i Consorzi hanno dovuto affrontare e la vastità dell'organizzazione preparatoria ed esecutiva.

L'attrezzatura, l'organizzazione dei cantieri hanno avuto notevole importanza poichè si voleva in pochi anni mettere il territorio pontino in condizioni di assoluta sicurezza per ciò che ha riguardo alle acque e renderne possibile il più sollecito sfruttamento agrario.

Occorreva quindi adeguatamente provvedere i due Consorzi

di macchinari e di mezzi ausiliari onde intensificare il lavoro. La Bonifica di Piscinara acquistò il raccordo ferroviario alla stazione di Sermoneta-Bassiano. Facilitato con questo mezzo il ricevimento dei materiali, fece da questo punto partire una ferrovia Décauville che, elettrificata per un percorso di 40 km., penetra nel territorio di Piscinara fino ai nodi più importanti dei lavori. Con diramazioni provvisorie di altre ferrovie di servizio e trazione a vapore od a petrolio, è stato possibile trasportare a piè d'opera tutti i materiali occorrenti alle costruzioni. Si costruì poi subito nella località della attuale Littoria un grandioso cantiere centrale con magazzini, officine per meccanici e falegnami, rimesse e quant'altro poteva ocorrere ad un intenso sviluppo dei lavori.

La dotazione di mezzi d'opera e di macchinari dei due Consorzi è la seguente: binario Decauville km. 200; locomotori elettrici n. 8; locomotive a vapore n. 22; locomotori e motocarrelli a petrolio o a nafta n. 20; carrelli Decauville n. 2500; escavatori a secchie n. 6; escavatori a benzina n. 8; draghe n. 5; senza contare una quantità enorme di altre piccole macchine quali battipali, pompe, impastatrici, motori a benzina ed elettrici.

Occorreva assicurare la provvista del materiale per le costruzioni stradali e per i fabbricati, ed a questo fine vennero aperte in località « Monticchio » e « Mezzomonte » due cave di pietra dotandole di tutto il macchinario idoneo all'estrazione e alla cernita del materiale, ed alla frantumazione del pietrisco e della sabbia.

Da ciascuna di queste cave furono estratti in media oltre 1000 m^3 per giorno. Altre cave di tufo, pozzolana e calcare furono

aperte in altre località, tutte collegate con linee ferroviarie consorziali.

Ai nodi stradali sorsero villaggi rurali dotati di chiesa, scuola, infermeria, caserma dei Carabinieri, dopo-lavoro, posta, etc. Ad ognuno di essi furono annesse molte case operaie per ricoverare in igieniche abitazioni i lavoratori che vengono dalle più lontane parti d'Italia. Queste case operaie furono costruite in modo da essere utilizzate a scopi agricoli, quando, partiti gli operai della bonifica, i coloni prenderanno il loro posto come in parte è già avvenuto.

Il dormitorio diventa stalla, oppure granaio, fienile ed una comoda casa, già destinata al personale dirigente ed agli assistenti, accoglie la famiglia colonica.

In ogni centro di nuova costruzione fu predisposto un locale dove trova ricetto il Dopolavoro. Un'ampia sala di riunione nella quale trovasi installato un cinematografo e la radio, rende possibile agli operai dei cantieri un sano ed istruttivo passatempo nelle ore di riposo. Un ufficio di collettoria postale congiunge questi forti lavoratori con le loro famiglie rimaste nei lontani paesi.

Una rete di distribuzione dell'energia elettrica necessaria all'azionamento dei macchinari, copre già la zona di bonifica, dà illuminazione a tutti i fabbricati costruiti e servirà per l'elettrificazione dell'agricoltura, nonchè ad azionare gli impianti idrovori e gli impianti di sollevamento dell'acqua di irrigazione.

A questi due ultimi fini la quantità di energia che verrà an-

nualmente assorbita, raggiungerà la cospicua cifra di 6 milioni di Kwo.

I Consorzi, al fine di difendere gli operai dalla malaria, hanno predisposto un servizio di assistenza e di difesa di tutto il territorio dei lavori, con la presenza costante di medici e di infermieri opportunamente dislocati, dividendo il territorio in tante zone quanti sono i nuclei di assistenza, il cui esercizio è gestito dalla Croce Rossa. Per interessamento e col concorso dei Consorzi sorse sulla direttissima Roma-Napoli una nuova stazione, cioè quella di Littoria, e così si è dotata la pianura di un nuovo sbocco ferroviario su una linea di grande comunicazione, al quale faranno capo i prodotti della terra rinnovata verso i mercati di consumo.

Mentre si eseguivano le opere per la valorizzazione della pianura, si è studiata la sistemazione di tutto il bacino montano che invia precipitosamente al piano le sue acque rovinose: tutta la zona che sovrasta la palude pontina, estesa 54.000 ettari, è stata già minuziosamente studiata e si sono concretati i progetti di massima delle opere di correzione dei corsi di acqua ed il piano di rimboschimento e di miglioramento dei pascoli.

Lo stesso studio si farà per il territorio montano, dominante la pianura di Piscinara esteso 24.000 ettari.

La sistemazione montana ha importanza non minore delle opere del piano poichè, per salvare queste, occorre impedire che la terra delle pendici scenda più o meno precipitosamente in pianura ad interrire gli alvei.

Da quanto si è detto si può avere un'idea della grandiosità e complessità dell'impresa assunta dai due Consorzi, impresa che, senza la consapevole tenace volontà del Governo fascista, non sarebbe mai stata affrontata adeguatamente e portata a compimento.

A titolo di curiosità statistica accennerò che i due Consorzi hanno sinora aperto e sistemato canali di bonifica (trascurando i fossetti di guardia, le cunette e i canali minori) per una lunghezza complessiva di circa 1.400 km., e costruito e aperto al traffico strade ghiaiate e cilindrate per quasi 500 km. I volumi di terra rimossi per aprire i canali e per costruire strade ed argini o colmare depressioni si aggirano già sui 25 milioni di mc.

I materiali di cava (pietra, pietrisco, sabbia) impiegati nell'inghiaiamento delle strade e nei manufatti di bonifica raggiungono ormai i 2 milioni di mc.

Le giornate d'operaio impiegate nei lavori dal 1926 ad oggi sommano a ben 8 milioni, con una spesa complessiva per soli salari di oltre 150 milioni di lire.

Quale sarà la spesa per l'esecuzione di tutte le opere di cui si è fatto cenno? La previsione dei progetti di massima, avvalorata dai molti lotti già eseguiti, porta una spesa totale di 740 milioni, di cui 450 per la bonifica di Piscinara e 290 per la Bonifica pontina.

Cifre non molto alte se si confrontano coi costi di altre bonifiche tanto del nord quanto del sud d'Italia, e se si tiene conto della straordinaria densità delle canalizzazioni e delle opere, richiesta dalla configurazione altimetrica e idrografica del Comprensorio,

e dalla densità degli appoderamenti con unità fondiarie di 10 a 15 ettari. La fertilità del suolo che si conquisterà può essere sfruttata per tutto l'anno, poichè in questa zona benedetta quasi non si conosce l'inverno e si può, almeno in tutta la parte pianeggiante, sfruttare a beneficio della vegetazione la caldura estiva mercè la irrigazione abbondante.

Alla bonifica in esecuzione dai Consorzi, così come è stata predisposta in tutti i suoi molteplici aspetti, e che si incammina al suo compimento, si è affiancata poderosamente l'Opera Nazionale dei Combattenti, per la bonifica agraria ed il rapido appoderamento di una vastissima zona di territorio.

In due anni l'Opera Nazionale Combattenti ha costruito oltre 1.500 fabbricati rurali oramai tutti occupati da coloni provenienti in gran parte dal Veneto; con le sistemazioni poderali e con la dovuta assistenza tecnica ha realizzato la trasformazione della palude e della macchia, coordinando così le varie energie e dirigendole ad un unico scopo; la redenzione della terra e con essa quella dell'uomo.

Tra le grandi intraprese è pure da segnalare quella assunta dall'Università Agraria di Sermoneta con la costruzione di 135 case coloniche su poderi di dieci ettari ciascuno.

Altre case sono ora in corso di costruzione conforme al programma che fu enunciato a Littoria stessa da S. E. Mussolini il 18 dicembre 1932 quando indicò quelle che sarebbero state le tappe future e cioè:

« Il 28 ottobre 1933 si inaugureranno altre 981 case coloniche.

Il 21 aprile 1934 si inaugurerà il nuovo comune di Sabaudia. Vi prego di notare queste tre date.

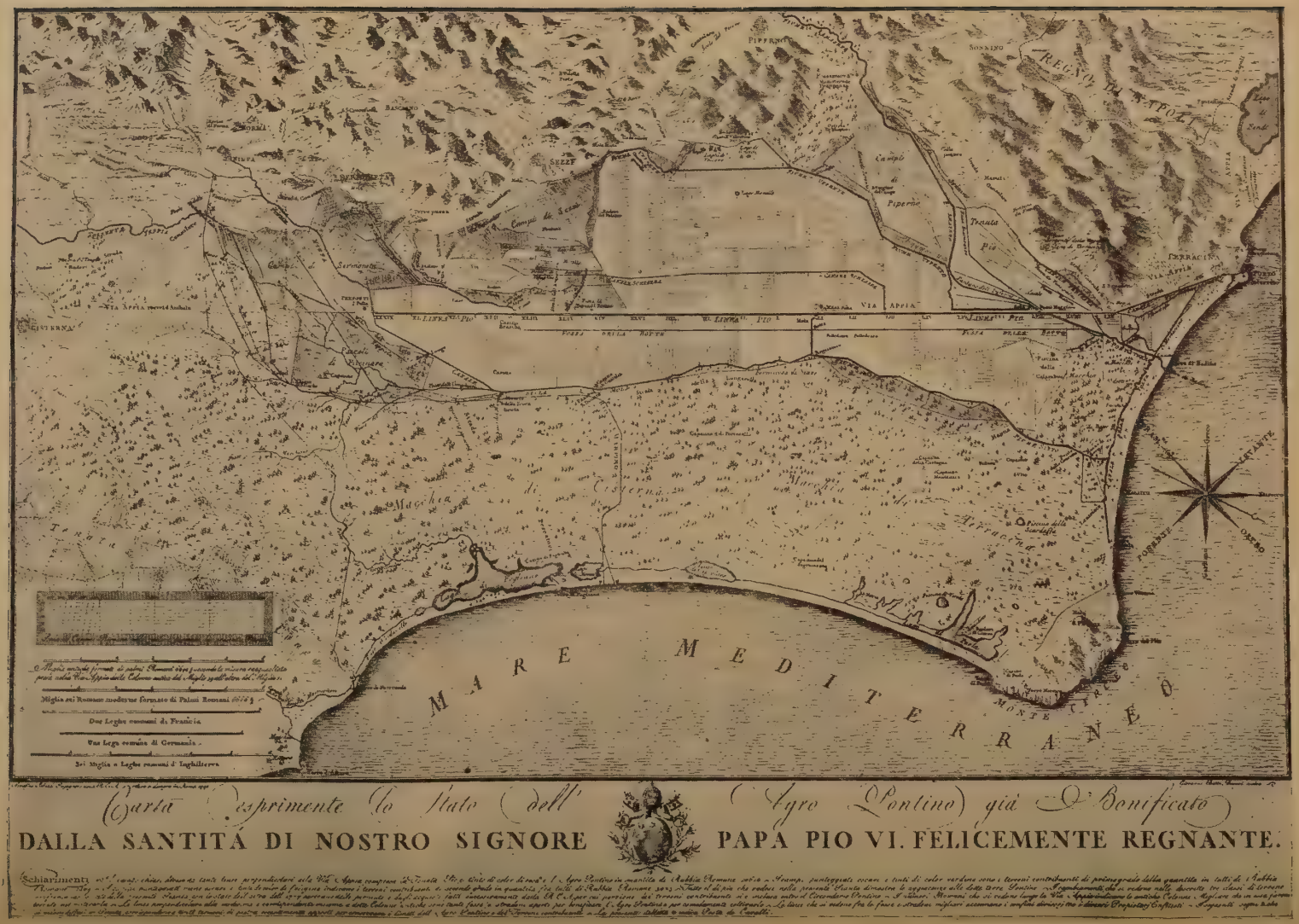
Il 28 ottobre 1935 si inaugurerà il terzo comune: Pontinia. A quell'epoca, per quella data, noi probabilmente avremo toccato la mèta e realizzato tutto il nostro piano di lavoro ».

Il ritmo della bonificazione pontina continua a svolgersi con crescente intensità.

Da questa attività in pieno consenso di Governo e di Popolo, è in atto la redenzione dell'Agro pontino. Dove pochi, sparuti e febbricitanti coloni si accampavano per qualche mese all'anno a trarre uno stentato prodotto, una numerosa, stabile e ricca popolazione eleverà il canto del lavoro e della gioia riconoscente all'Uomo che l'opera volle per la grandezza d'Italia.

Aprile 1934-XIII.

ILLUSTRAZIONE FOTOGRAFICA DELL'AMBIENTE, DEI MEZZI E DELLE OPERE DI BONIFICA



L'Agro Pontino come era rimasto dopo la bonifica di Papa Pio VI°.

L'Agro Pontino dopo la bonifica voluta dal Duce.

Allagamenti nella Selva di Terracina.

Una piena nella zona di Piscinara.

La piena sormonta la vecchia strada dalla via Appia a Quadrato (oggi Littoria).

Piena nella zona Pontina.

Un raggruppamento di « Lestre »
(capanna con campicello difeso dal bestiame brado).

Una capanna.

Il Duce visita la bonifica.

Una cava consorziale (Mezzomonte al Circeo).

Una cava consorziale. (Monticchio di Sermoneta).

Le ferrovie di servizio per il trasporto dei materiali.

Ferrovia di servizio a trazione elettrica.

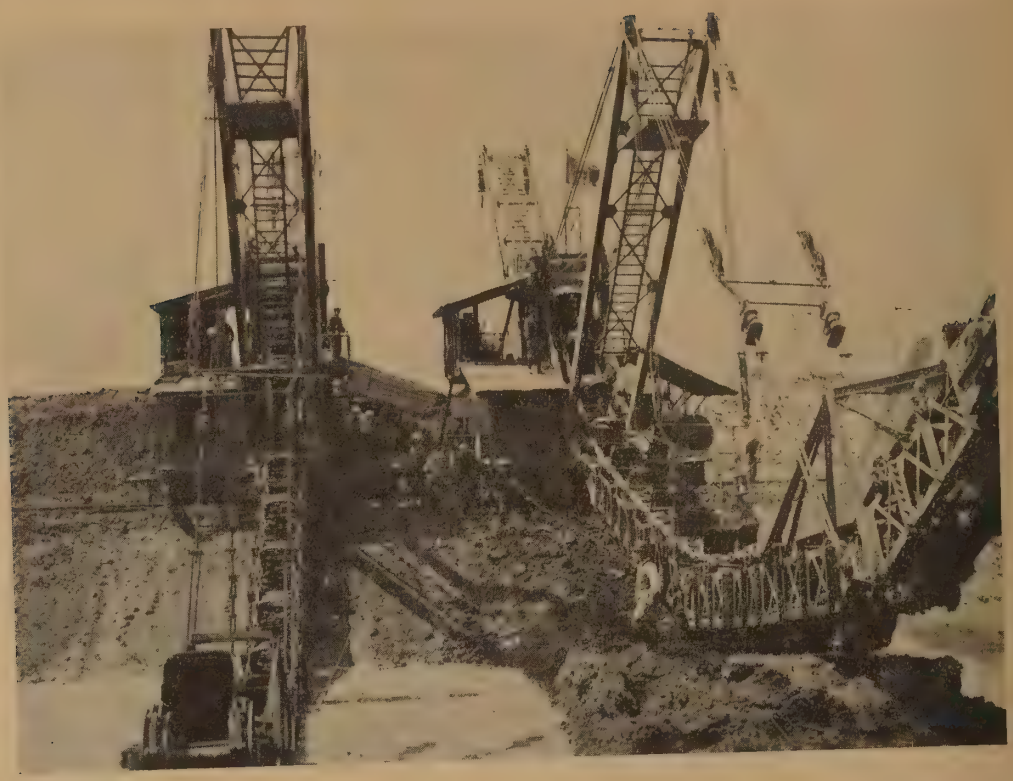
Il trasporto a vapore dei materiali lungo le strade.

Pontile per il ritiro dei materiali da costruzione (S. Felice Circeo).

Officine consorziali per la manutenzione dei mezzi d'opera a Quadrato (oggi Littoria).

Baraccamenti per l'alloggio degli operai di un cantiere.

Uno dei grossi escavatori a catenaria per lo scavo dei canali (azionato elettricamente).



Particolari degli escavatori a catenaria.

Un escavatore a badile per la costruzione delle strade (azionato con motore Diesel).

Un escavatore a benna trascinata per lo scavo dei canali (azionato elettricamente).

Diserbatrice meccanica per la pulizia dei canali.

Draga a refluimento per il risanamento delle sponde dei laghi litoranei (azionata con motore a vapore).

Draga a secchie per lo scavo dei canali (azionata con motore Diesel).

Draga a secchie in lavoro per i piccoli risanamenti al Lago di Sabaudia.

Un tratto del Lago di Sabaudia sistemato.

La draga refluisce le melme scavate dai bordi e dal fondo dei laghi a distanze anche molto notevoli.

Le melme refluite raccolte in appositi bacini di decantazione servono a colmare vaste depressioni.

Il bordo dei laghi prima della sistemazione.

Le zone depresse circostanti ai bordi dei laghi.

Un tratto del Lago di Fogliano sistemato con rivestimento in muratura.

Un tratto del Lago di Caprolace sistemato con argine di materie torbose e piantagioni di arbusti.

Il Duce visita i lavori di bonifica.

Scavo a mano di un canale.

Il Duce fra gli operai.

Costruzione di un canale rivestito in muratura nella Selva di Terracina.

Esecuzione a mano di grandi colmate nei pantani litoranei.

Il Duce fra gli operai di bonifica.

Il Duce fra gli operai di bonifica.

La costruzione delle strade nella Selva di Terracina.

Strada in costruzione nella Selva di Terracina.

Strada in costruzione.

Opere per lo sfocio del Canale Allacciante Astura nel Canale Mussolini.

Scavo meccanico del canale Mussolini.

Il Canale Mussolini con la parte centrale rivestita in muratura.

Il ponte sul Canale Mussolini alla Via Appia.

Un tratto del Canale Mussolini in galleria.

Canale a mezza costa in muratura per la deviazione nel Canale Mussolini del torrente di Sermoneta.

Diga di sbarramento per deviare un canalone dei monti Lepini nel Mussolini.

Il ponte sul Canale Mussolini per la strada lungo mare.

Lo sfocio dell'Allacciante Astura nel Canale Mussolini.

Uno sbarramento sul Canale Acque Medie.

La foce a mare del Canale Acque Medie.

I moli per la foce a mare del Canale Acque Medie.

Opere di imbrigliamento per i canali nella Selva di Terracina.

Una veduta del Lago di Fogliano dopo la sistemazione.

Opere per la pesca nel Lago di Fogliano.

Un impianto idrovoro secondario (Olevola).

Un impianto idrovoro secondario (Capo Portiere).

Il grande impianto idrovoro di Mazzocchio.

Interno dell'impianto idrovoro di Mazzocchio (7 pompe da 5 mc./sec.).

Un impianto di sollevamento per l'irrigazione (Montenero).

Condotte in tubi metallici e in cemento armato per le acque di irrigazione.

Un canale rivestito a servizio della irrigazione e del nuovo zuccherificio di Littoria Scalo.

Una delle principali strade di bonifica.

Un villaggio consorziale di bonifica (Borgo Podgora).

Un villaggio consorziale di bonifica (Doganella).

La chiesa ed il serbatoio dell'acqua potabile in un villaggio consorziale (Borgo S. Michele).

La chiesa di un villaggio consorziale (Borgo Sabotino).

Chiesa e serbatoio dell'acqua del villaggio di S. Donato.

La scuola di un villaggio consorziale (Borgo Grappa).

La sede del Partito, Milizia Volontaria, Dopolavoro e della Posta in un villaggio consorziale (Littoria Scalo).

Zona bonificata presso Littoria (anno 1932).

La stessa zona (terreni lungo l'argine del Teppia durante una piena, anno 1928).

Gli appoderamenti seguono la bonifica.

Gli appoderamenti seguono la bonifica.

Veduta di Littoria.

Veduta di Sabaudia.

Il Duce trebbia i primi grani dei terreni bonificati.

TIPOGRAFIA DELLE TERME
ROMA - VIA PIETRO STERBINI, 6
ANNO 1937 - XV

-88-

G. C. BARAVELLI

Integral Land-Reclamation in Italy

SOCIETÀ EDITRICE DI "NOVISSIMA"
ROMA A. XIII

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A PROBLEM OF THE AGES

IN the economic and social history of Italy, two subjects are for ever cropping up at regular intervals, one after the other, first by themselves and then in close connection one with the other. One of these topics is the fertility of the Italian land, the *Salve, Magna parens frugum, Saturnia Tellus* of Virgil; the second is the lamentation over the barrennes and uninhabited condition of many districts in Italy; the *latifundia Italian perdidere* of the elder Pliny.

Barren zones, marshy and uninhabited zones there certainly are — and, above all, there were — scattered here and there in almost every quarter of Italy. But more especially two great groups of these regions, two long wide strips attract the attention of anyone who consults a sufficiently detailed physical map of Italy. The first strip lies to the north-east on the upper Adriatic; the other to the west on the central Tyrrhene Sea. The first constitutes as it were a great fan which extends for about a million hectares to left and right (that is, to north and south) of the river Po, widening, in one direction, across the lower Veneto as far as to the Isonzo; that is, almost as far as Istria; and in the other direction along the line at the foot of the Eastern

Apennines as far as the Rubicon, where is the pasage from northern Italy to central Italy. The zone is rich in natural beauty, monuments and works of art, and great historical memories. Aquileia, one of the greatest cities of the Empire up to the time of its ruin under the flood of the barbarian invasions, lies in this zone; the lagoons of Venice with their dim origins and the marvellous development of the Republic of S. Mark; the splendours of Bizantyne Ravenna, the home of Galla Placidia, of Theodoric and Narses, the city which has witnessed the passage of exarchs, archbishops, Lombards, Franks and emperors of the Holy Roman Empire; all these are here.

In this zone, so rich in history, the struggle against marshland and malaria dates from very, far back. In it the Venetian Republic played a preponderating part, with its Magistracy of uncultivated lands (*Magistrato dei Beni incolti*) under which were engaged various local Consortia, pledged to discipline the water-courses and redeem the land. But in spite of the efforts, extending over centuries, of different governments, the Kingdom of Italy found in the Veneto and Emilia vast regions which still stood in need of redemption and reclamation.

These were territories lying below sea-level or beneath the level of the rivers which traversed them; rivers whose outlet to the sea was blocked by dunes. The carrying off of the water was either completely arrested; or, at least, subjected to uncertain and dangerous periods of suspension. Thus the water stagnated and rose to a level which rendered difficult any utilization of the adjacente land. These regions sometimes resembled valleys near the sea, full of salt water; sometimes they were marsh-land pro-

A view of the Pontine Marshes before reclamation

Before reclamation- Shepherds' huts

« Monforesto » reclamation - Cutting a canal with drags and by hand

Pontine reclamation - Machines at work in the territories to be reclaimed

Ferrara land-reclamation - « Garbina » aqueduct and reservoir for distribution

Reclamation of S. Stino di Livenza (Veneto) - Intersection of roads and canals

Pontine Marshes - Drainage works

Pontine raclamation - Breaking up the soil by means of mines

ductive only of litter for cattle; sometimes, again, they were poor meadow-land or pasture-land of wretched quality subject to longer or shorter periods of flooding; sometimes it was possible to cultivate them; but, always owing to hydraulic conditions, only in a very restricted measure, the choice of the products to be grown being subject to many contingencies.

The second large zone of barren and marshy lands, the Tyrrhene, extends from the Serchio to the Sele. It is fortunately less compact than the first zone; but, from beginning to end, it covers a greater length of territory. There is a dinstinction between the Tuscan Maremma, the Roman Maremma and the marshy regions of the Campagna. Here again we find great natural beauties different from but not inferior to those in the north, a vast and varied artistic patrimony, historical records of the ancient Etruscan towns, of the Republics of the Campagna during the late Middle Ages, of the Tuscan Communes, and above all of immortal grandeur of Rome.

One of the most extensive and celebrated of all the marshy zones is the Pontine Marshes which are crossed by the Appian Way, the « Queen of Roads. » This region, the Tyrrhene, together with the hydrographic characteristics common to the Adriatic zone, possesses qualities especially its own. Here there is not only the question of the rain-water which cannot flow away regularly, owing to the low level of the land as comparend with the sea, or because it finds its way blocked by the cordons of the dunes stretching along the sea-shore. Here in addition are frequent irruptions of water, especially during periods of heavy rainfall, which tears dovn in torrents from the surrounding

mountains into the narrow plains bordering the sea, inundates them and converts them into morasses. Such lands, in as much as they can be cultivated, serve only for pasturage, sometimes alternated with extensive wheat-production. The productive pontentiality is not lacking and the climate permits of vegetation even in the winter; but, together with the irregularity of the water-system, the violence of the malaria used to drive the workmen from the territory for months on end; these workmen, moreover, were nearly all casual labourers, coming from the hills and the neighbouring mountains.

In the Tuscan Maremma the struggle against these unfavourable conditions had already been taken in hand during the past centuries, especially by the Grand Dukes of the House of Lorraine. The *Motu proprio* of Leopold II, of November the 27th 1828 is well known. But farther to the south, conditions had remained sufficiently serious, particularly in the valleys of the Osa and the Albegna, where, from every point of view, a primitive state of affairs prevailed owing to the violence of the malaria, to hydraulic disorder, and also to the cultivation of vast tracts of land belonging to single owners by a system in which pasturage alternated with a wheat-production yielding miserable returns, due to the extremely low level of the stable rural population.

In Latium a distinction must be drawn between the Roman zone (*Agro Romano*) properly so called and the Pontine Marshes. With regard to conditions in the first region prior to the recent transformations, we cannot do better than quote a page, written

half a century ago, from the works of the ever vital and ever exact Oriani:

« A mournful spectacle! Wherever I turn my eyes I see naked expanses of meadow, ravaged and uneven. At rare intervals a few twisted oak-trees stand up like wretched survivors from some mighty ruin, spared as a refuge to crows by the Spirit of destruction. In dense hollows, along the edges of tortuous marshes and on the ridges of little hillocks, reeds and canes were whispering, and their murmur, scarcely perceptible through the breath of the mist, was lost like an echo for which one seeks in vain.

« Endless palisades inclosed in circles enormous tracts of land intersected by ditches and cut up by little brooks; then, one after the other great cones made of hay lifted themselves up, arranged in lines or in semi-circles; little dwellings of the shepherds, or very large inclosures destined to the flocks and herds.

« Far, far away a brown streak ruled a line between the fields and the horizon. It was an aqueduct without water. Its arches were broken by the passage of time, or, worse, owing to the carelessness or fury of men; and it was now the impotent shadow of a past grandeur, the glorious record of a civilisation now lost in the graveyard of history. »

This description particularly concerns the Roman zone; but in its essential points it holds good also for the Pontine Marshes. Here the vegetation was in certain tracts more luxuriant, but the lack of population was even more serious. Ninfa, the « Pompei of the Middle Ages », as Gregorovius calls it, is an eloquent testimony of the ever-increasing dominion through the

centuries of malaria in this region. The traveller can see and wonder at its walls and at its public squares abandoned for centuries and overgrown with vegetation which in spring is a glorious riot of flowers. In this territory the great estates reigned supreme; and although cultivation was not wanting, it was of a very primitive nature and consisted mainly of pasture. During hundreds of years attempts at reclamation had been frequently set on fott, perhaps ever since the days of Appius Claudius at the end of the IVth century B. C. Julius Caesar, Augustus, Nerva, Trajan, Theodoric, and, later, a whole series of Popes — Boniface VIII, Martin V, Sixtus V, and above all Pius VI, had set their hands to the work; but on every occasion it had been suspended.

If to these two great zones of marshy and uncultivated land, we add the many other isolated districts in Apulia, Calabria, Sicily and Sardinia, the vasteness of the problem of land-reclamation in Italy can easily be understood. And the brief historical notes which we have given above, will serve to show that this problem weighed heavy, during centuries, on the conscience of Italy.

THE FASCIST CONCEPTION

It has been said that the history of land-reclamation constitutes, in a certain measure, the history of the Italian people. Since the most ancient times, the population of the peninsula, from generation to generation, has been forced to wrest the soil, metre by metre, form the devastating fury of the water, the marshes, malaria and drought. This is more particularly the case in the first great zone, that of the Adriatic where the inhabitants of valley of the Po strove to win dry land from the hostile conditions of their surroundings.

When the Kingdom of Italy was finally constituted, the problem became yet more urgent; and not alone when considered as a series of isolated local questions, but in its general bearing upon the nation taken as a whole. It was, however, mainly regarded as a hydraulic problem to be resolved towards hygienic ends. The first law, that of Baccarini on hydraulic land-reclamation, dating back to 1882, is entirely inspired by the idea of combating malaria, and is based upon the supposition that — in order to attain this aim — it would suffice to eliminate the great morasses by means of canals and the depositing of silt. It also happened that, in this period, the hydraulic reclamation was mainly advantageous to districts in the Po valley, rather

than to those regions farther to the south which, as a matter of fact, suffered far more heavily from malaria.

It must not, however, be supposed that, over and above the hydraulic reclamation and hygienic improvements, the final object — of an economic and social character — of agricultural production and colonization had been ignored. Tre vexed question of the uncultivated lands was frequently touched upon in the speeches of men interested themselves in public affairs; for these territories, once rendered fertile, would suffice to afford shelter and employment to the many Italians who istead emigrated over-seas. But the then existing State, while considering the reclamation of uncultivated and marshy lands, very distinctly divided the undertaking of this grandiose work into a public sector and a private one. The State recognises that it is not possible to expect only from the private initiative of proprietors, alone or in groups, the execution of *all* the works asked for; and itself assumes a part of these works, which are then called *public*. It is the State which, directly or otherwise, carries them out with financial means of its own but sometimes calling upon the proprietors to contribute towards the cost. With regard to the other works, these remain the duty of the private owners. The State « superintends » them. The State lays down roads, drains marshes, systematises torrents, etc. It then expects that the proprietors shall do the rest — that is, regulate the land, provide smaller roads between the farms, build stables and set on foot the consequent intenser forms of agriculture. This is the sphere in which the individual is arbiter, and into which the State should not enter.

On one hand, therefore, we have a public undertaking which ends with the completion of certain works; on the other hand, a private undertaking to recondition the landed property. It would be difficult to state with precision those criterions by which some works are considered as public and others as not. It is certain that those aims and ends which have above been called public cannot serve to mark the distinction because they are not possible of realization save by means of the integral execution of works considered public and of those considered private; that is, by means of those new forms of agriculture towards which the said public and private works are equally necessary.

Owing to this definite separation between duties and capacities, it followed that, even when the State realized its own share of the work, the private owners did not realize theirs, or at least proceeded very slowly. This happened owing to various causes. The cost of the undertaking, which was not able to find its immediate recompense in an increase of income from the land, certainly had something to do with it. It is true that the State tried to provide against this by granting financial aid to the private works by means of loans on easy terms; but not always successfully. The identification of the real man with *homo economicus* is always being proved false and in the rural world more than anywhere else, and particularly in this field of transformation of landed estates, where it is constantly being proved that proprietors and agriculturalists made of flesh and blood are carrying out — knowingly and not alone through some error in foresight — improvements upon landed property which

result in an entirely inadequate return for the capital employed; while others do not carry out such improvements at all, even though they would render a large return. Typical is the case of the proprietor of the great *latifundia* who lets out his immense tracts of land to be cultivated by the traditional alternation of extensive wheat-production and pasture, and is with difficulty persuaded radically to recondition his territory even when it might be presumed profitable to do so.

To sum up: the financial advantages which would accrue to the private owner, if he completed the works carried out by the State by means of a reconditioning, on his part, of his own landed property, do not always suffice effectively to induce the owner to do his share. What, then, could the Liberal State do? It could have recourse to the Institute of Expropriation towards public utility, declaring obligatory that reconditioning of landed property by which the execution of public works is rendered integral, and actually expropriating the estates of the proprietors who fell short of their engagements. As a matter of fact, such a procedure has rarely been adopted, because the State instrument itself, the very criterions which guided the action of the State no less than that of the proprietors, and the difficulty — even for the State — of arriving at a new systematisation of the expropriated lands operated in such a manner as to leave the threat of expropriation merely a dead letter.

In general, the State found itself faced with the following dilemma: either a free-trade policy — that is, the abandonment of integral land-reclamation to the free initiative of the proprietors either singly or associated; or a downright Socialist

Sibari reclamation - A consolidating dyke

Pontine area - Suction-pumps and large canals

Sabaudia

Sabaudia - A reservoir

solution — that is, the assumption by the State of the whole work of integral land-reclamation.

In order to overcome the dilemma, both horns of which had their serious inconveniences, it was necessary to unify both public and private activities in one superior conception, the private activity being understood as a social function of national interest. Private activity and that of the State would thus be combined and would fuse in a manner best calculated to respond to the needs of the nation considered as a unitary organ.

This is the conception of Integral land-reclamation, in which hygienic, economic and social aims and ends are no longer separated one from the other. On that account, the interest deriving from capital employed in the undertaking is not the sole element to be considered. The private individual, who is free to choose the manner in which he will invest his own capital and who is influenced solely by his own financial interests, might decline to put his money into land-reclamation, because it is a less paying concern. The nation, on the contrary, in its unity and continuity, may find an abundant reward for an immediate financial sacrifice. From this point of view, it is no longer possible to say that the private land-owner is interested only in increasing the income from his estates, while the State is interested only in the other advantages, hygienic, social, and so on, of land-reclamation. The nation will be likewise interested in the amount of income derived, while the citizen will consider it as his own advantage to take part in a healthier and stronger social organism.

Integral land-reclamation, therefore, is one of the affirma-

tions of the Régime's agricultural and ruralising policy. Economic reasons and moral reasons have a notorious part in this policy. In the economic structure of the nation, there are certain pillars of support which must not be allowed to collapse. Such is the production of the first necessary food-stuffs — bread, milk and meat. But a numerous and robust rural population signifies also a higher birth-rate, a greater love for property, home and family, an intensified thriftiness. Rural society is a reservoir without which the cities would and by becoming petrified, growing old and uninhabited.

The Fascist Régime has directed towards the land the major part of its energies and of its goodwill, because the land is the chief point of comparison and the supreme test by which the character of a people, no less than of an individual, is affirmed. The land takes the whole of a man, and imposes upon him duties and responsibilities which transcend his ephemeral being because they concern future generations even more than those now present. The land is a great educator, a schol of sacrifice and morality, because the risk is continuous, unable to be foreseen, and changeable as the forces of nature. The chief reward of agriculture consists in a man's knowledge that he has done his duty and in the certainty than his works in more than an industry; it is a mission. Antiquity, in its profound intuition of the world and life, raised agriculture to a religious rite with its gods, its ceremonies and its priests.

These social and moral comprehensions of an agricultural policy are particularly apparent in the two following instances:

the provisions taken for life in mountain-zones, and for colonization.

Life in mountain areas pre-eminately demonstrates rural virtues such as attachment to the land, the family and religion; endurance of discomforts; sobriety, discipline and stability. It has been well said that the sum-total of life in the mountains is « the combined prodigy of a mass of privations and sacrifices compensated by satisfactions which are wholly psychological »; since the land in the family nucleus in mountain-zones counts above all as a sense of life, of possession, of mastery, of independence and of personal creation. A very evident example of that general integration which is the foundation of the new designs for land-reclamation may be discovered in the economy of the mountain regions. A policy having regard to the forests in these districts must be brought into relationship with other necessities of the mountaineer, above all with that of stock-breeding, and therefore with the meadow-lands, pasture-land and the cultivation of forage.

The question of colonization is so strictly bound up with integral land-reclamation that the first category of zones assigned for reclamation — that in which the State contributes to the largest extent — is precisely constituted by districts in which the predominating aim and end of reclamation is their colonization. Here, more than ever, evidence is at hand to prove that the criterion of financial advantage is not the decisive factor. It may very well be the case that other undertakings would yield a greater return for capital employed than for that which is here sunk in the land. But the work undertaken with an ultimate

purpose of colonization has been willed by the State with a view to gaining advantages beneficial to the nation as a whole, and these advantages will compensate for the smaller income deriving from the capital employed.

The Fascist Régime believes private property to be fundamentally important to the nation. Therefore, as far as lands destined to colonization are concerned, the Fascist Government maintains those private owners with whom it meets, provided that there is no question of lands which from the first have been common or Crown property.

But the owners are under the obligation to recondition their lands; only if they do not carry out this obligation are the lands expropriated. In many cases the proprietors may themselves agree to sell the land which has been assigned for colonization. Relative to the rural settlements to be planted upon the reclaimed territory, the Government has selected those best corresponding to the national purpose of reconditioning by colonization: namely, not working units represented by single individuals, but by colonial families bound to a special agrarian undertaking by a long-time agreement and also by a common interest in production.

THE MUSSOLINI LAW

Let us now briefly consider the precise legislative provision for integral land-reclamation.

Above all, the law of the 30th of December 1923, N. 3256 notably enlarged the conception of land-reclamation, since it recognised the necessity of not limiting the work in marshy districts merely to their drainage. It therefore desired that various other complementary works should be included in the hydraulic reclamation and subjected to its discipline. These complementary works were directed to render secure, by means of a systematisation of mountain and valley zones, the hydraulic results of the drainage; to guarantee, with the aid of small reclamation undertakings, the hygienic efficacy of the drainage; to correct and improve, by means of road and the provision of drinking water and water for irrigation purposes, the conditions in the neighbourhood in such a manner as to render possible a more intensive utilization of the improved zone.

This law was perfected by another of the same date N. 3267 which assigns to the State a series of works directed towards the hydrogeological re-adjustment of mountain-territory. Yet, with these laws, the question was still limited to the redemption

of territories which were marshy and defective in outlets for water.

Two successive laws, of the 18th of May 1924 and the 29th of May 1925 extended reclamation-activity to those territories which — owing to hydrogeological difficulties, lack of roads, want of water for irrigation, and, in general, on account of serious causes physical and social — found themselves in backward conditions as regards agriculture while they were susceptible of being tranformed with results very relevant to the general interest. Next followed a series of laws between 1925 and 1927 directed to encourage the breaking up of the soil, motor-ploughing, and use of electricity, to organize credit in favour of agricultural improvements, to increase government contributions towards works of irrigation, and to promote the constructions of rural centres.

The law by which the programme of integral land-reclamation was set forth in all its meaning was that of December the 24th 1928-VII, which takes the name of the Mussolini Law. It has been declared « a fundamental law of the Régime ». By means of this law, the gaps in earlier legislation have been stopped, in order full to resolve the problems of food-supplies, drinking water, roads necessary to increase cultivation, buildings and rural centres. Above all, provision has been made for financial means adequate to the application of the numerous laws on land-reclamation, all of which are now summed up by the new law under the name of Integral-reclamation.

The plan of the works laid down the law reaches a figure of about seven milliards of Italian *lire* of which four and a half

milliards concern the hydraulic reclamation and the relative complementary works. The rest is for works of irrigation, construction of buildings and rural centres, rural aqueducts and roads between the different farms.

Finally came the Royal Decree of February the 13th 1933-XI which coordinates the laws already in force and gives a final systematisation to the juridical discipline of integral land-reclamation. This decree distinguishes between works of reclamation properly so called and improvements carried out upon landed property. The first are characterised by a variety of works to be carried out systematically upon the basis of a general plan, over territories classified and determined by the State as « areas assigned for reclamation », towards important ends hygienic, demographic, economic and social.

From these operations proceeds a radical transformation of the scheme of production. On the other hand, works of improvement over landed property are carried out the advantage of one or more estates, independent of any general plan of reclamation. The areas assigned for reclamation are in their turn subdivided into two categories. The first comprises those which have an exceptional importance, especially towards the ends of colonization. The second comprises all the rest. In both categories there are works which pertain to the State and works which pertain to private owners. The first are carried out at the care and expense of the State, aided by contributions from the proprietors. The second are obligatory, and at the proprietor's expense but with the aid of a financial subsidy from the State. The percentage of the costs borne by the State in the operations

which pertain to the State is much higher in areas assigned for reclamation belonging to the first category than in those belonging to the second. These are also works (such as the systematisation of mountain-zones) in which the State, assumes the whole burden of the cost. The subsidy granted by the State, for works pertaining to private owners, is normally within one-third of the total expense, but may rise, in special cases, to as much as 45 or even 75 per cent. In addition, on behalf of the private owners, there exists a whole system of loans on easy terms granted by the Organisation for deposits and loans and other credit institutes.

In every area assigned for reclamation, the proprietors constitute among themselves one or more Consortia. The constitution is effected upon an adhesion of the majority, explicit or presumed in accordance with certain determined criterions. The Consortia can also in exceptional cases be constituted by the Government.

Tehir duty is in every case the maintenance and carrying out of reclamation operations; but works pertaining to the State can likewise be ceded to them when the State does not provide directly for such works. Further, they are bound to undertake works which concern private owners when these latter make such a request, the provision of the relative expense, in the measure and in the manner laid down by law, remaining with the State. Today more than 1800 Consortia have been constituted, over a total superficies of land of about 6 million hectares. A National Association of Consortia aids them and watches over their activities.

Pontine area - A road in the reclaimed territory

Pontine area - House for colonists

Littoria - The town-hall

The Duce takes part in threshing the first corn grown at Littoria

Side by side with the Consortia, another organisation within the orbit of the State directed to assist land-reclamation is that of the National Secretary for mountain-zones, who puts the equipment of his department at the disposition of the proprietors for the carrying out of works which pertain to themselves. The National Assocciation of Ex-Combatants deserves especially to be remembered. This Association, under the care of the president of the Council, provides for the acquisition, also forced, of lands susceptible of reclamation, transforms them to an intensive agriculture and distributes them to families of ex-combatant agriculturalists. Finally, a committee of representatives of the principal Institutes of Credit coordinates the financing of the works of reclamation.

The Governement organ which directs the sum-total of all these grandiose operations is the Undersecretariat of State for Integral Land-reclamation, in dependence upon the Ministry of Agriculture. This most important office is held by Signor Arrigo Serpieri. The Secretary can avail himself of a whole series of active and consultative organs.

RESULTS ALREADY OBTAINED

What are the result which, in all, have been obtained up to the present time?

From 1870 to 1922 the areas assigned for reclamation, in which the State has carried out works, have attained an extension, in all, of 1.390,981 hectares. During the first 11 years of the Fascist Régime this total superficies of territory has increased to 4,275,611 hectares. With regard to the cost and reducing the figures to the actual gold standard, we find that from 1870 to the 1st of July 1933, public works of hydraulic reclamation and reconditioning of landed property had been carried out for a value of 5243 million *lire*. Of this amount, 3527 millions appertain to the Fascist era, and 20,824 millions to the last four years alone when the Mussolini Law was functioning. By the 1st of July 1934, the cost paid by the Fascist State had risen to 4115 millions. One must also add the fact that in the last 11 years the State has granted subsidies to works on private estates for a total of 14,419 millions *lire*.

Over a superficies of about 2,091,187 hectares, the execution of the public works is already complete or nearing completion. In

the remaining 2,184,424 hectares of the total superficies subject to reclamation, the works in less advanced on the road to completion.

An inquiry recently made relative to the results of the activity in the field of reclamation from the economic and social point of view permits us to bring to light the most salient consequences of the operation, and provides us with the means of foreseeing the importance of the benefits which will be derived from the completion of the enormous programme of reclamation now under way.

A choice has been made of certain agrarian concerns situated in areas assigned for reclamation; with this criterion that they be representative not of the realization, after reclamation, of exceptional but of moderate condition. And figures have been compiled to show the value of the gross vendible production, the number of annual working hours per hectare, the percentage of a given quantity of work done by regular workmen (whether they be tenants or proprietors of small holdings, partial colonists, wage-earners on fixed salaries or peasants belonging to intermediate categories) as well as by casual labourers.

These figures, drawn up to represent two periods — before and after the reclamation — have a very important significance. They enable us to sum up the various results, economic, demographic and social, of the reclamation. They are given in the following page.

In the cases under consideration, increase in the gross vendible production has even touched the figure 2438 compared with the initial figure set at 100; and the increase in manual

Production, work done, and reduction of causal labour before and after reclamation.

Reclamation area	Value of gross production per hectare in lire			Work done per hectare			Percentage of casual labour	
	At beginn. (1)	At end (1)	Increase	At beginn. (1)	At end (1)	Increase	At beginn. (1)	At end (1)
	—	—	—	—	—	—	—	—
VENETO								
Sinistra Adige	1422	5560	391	277	1453	524	16	0
Caposile	265	2697	1018	111	852	767	91	3
Onaro Inferiore	88	1860	2114	46	525	1141	100	0
Bandoquerelle	353	1460	414	90	287	319	100	0
EMILIA								
Reclam. Ferrara	435	2162	497	173	623	360	100	15
Basso Ravennate	1976	6508	329	328	1677	511	0	0
Callare	335	1930	576	94	708	753	95	24
Parmigiana Moglia	516	3012	583	139	946	680	0	24
TOSCANA								
Piano di Cecina	804	2890	352	176	545	309	71	1
Grosseto	496	1558	314	71	257	362	74	12
LAZIO								
Isola Sacra	119	1130	949	90	472	524	89	5
Agro Romano	712	1940	272	135	540	400	38	3
CAMPANIA								
Sessa marsh	100	2257	2257	27	305	1130	92	9
First Vico zone	612	3284	536	206	430	208	43	1
APULIA								
Tavoliere di Foggia	318	1846	580	131	634	484	59	51
Murge Barese	200	1463	731	197	1769	898	58	21
Salina Grande	1314	7446	567	352	1037	294	89	0
Taranto	355	1100	309	230	1000	435	70	35
Estremo Salento	—	—	—	—	—	—	—	—
SARDINIA								
Terralba	62	1512	2438	22	796	3618	100	0
Sanluri	131	1010	711	40	337	842	5	0

(1) Figures show situation before and after works of reclamation.

work per hectare has risen from a minimum of 100 to 208 to a maximum of 100 to 3618.

Especially important is the reduction of casual labor which diminishes more or less markedly, and even in some cases is reduced to zero, signifying the complete stabilization of the worker upon the land.

The vastly increased prosperity of the land, the improved conditions of life among the agricultural labourers, the progressive regulation of surface-water have had a beneficial influence over malaria and are tending notably to diminish it, owing to that influence, not yet perfectly understood, which a more intense utilization of the soil has upon the violence of the endemic disease.

In a corresponding degree, the resident population in the reclaimed lands has sensibly increased.

In the Province of Ferrara, reclaimed over about half its agrarian superficies, the inhabitants who were about 84 to the square kilometre before the reclamation have now increased to 140.

In certain zones reclaimed in the Province of Venice (reclamation of Cavazzuccherina) not only has been a notable increase of population, which has tripled itself. A complete reversal of condition has resulted in the relation between scattered and dense population. For, while the dense population amounted to 553 inhabitants and that scattered to 2352, today they are respectively 1011 and 9490.

It is hardly necessary to record the Pontine area where the

Régime is carrying out very greatest of reclamation schemes in vain attempted by emperors and popes.

The Pontine area, which, during the summer months, sheltered only a few hundred men, huddled together in wretched reed huts and exposed to the gravest risks from the contagion of malaria, is today witnessing the birth of new cities and the building of houses, and contains about 60,000 inhabitants, between workmen and colonists.

Among the most important works in course of actuation or already completed, we may mention, in the zone which we have called Adriatic, the great area assigned for reconditioning of landed estates in the Lower Friulana (70,000 hectares); the reclamation-works of Burana over an equal territory; the Parmigiana-Moglia reclamation (74,000 hectares); the Cremonese-Mantovana (50,000 hectares), the Padano-Polesano reclamation of Rovigo (66,000 hectares). Among the Tuscan reclamation-works we may recall those of Viareggio, of Massaciuccoli, of the northern Pisan plain and of that to the south with the basins of Tombolo and Coltano. In the Tuscan Maremma properly so called, the reclamation of the plain of Grosseto (45,000 hectares) is notable; the work carried out by the Ex-Combatants' Association in the Alberese reclamation forms part of it. In the low alluvial plain of the Tiber in Latium we find three hydraulic works of reclamation carried out by electric pumps — Ostia, Isola Sacra (and Porto and Maccarese, in all more than 20,000 hectares). The second of these undertakings was also the work of the Ex-Combatants' Association. In south Italy the most important of works are those in Calabria; S. Euphemia, Sibari,

Alli-Punta delle Castella, all particularly difficult owing to the grave problems of mountain and hydraulic systematisation.

In Apulia the problem of the reclamation of the Tavoliere (over 400,000 hectares) has likewise been faced. Arrangements have been made for a complete hydraulic system, extirpation of malaria, and colonization. In Sicily the greatest work of hydraulic reclamation is that of the plain of Catania (22,000 hectares); but, over the greater part of the island, the basis of integral reclamation consists, not in a hydraulic reclamation but in one of irrigation — where it is technically possible — and in the reconditioning and colonization of the great estates held by single landowners. In Sardinia, the reclamation of the Campidano of Oristano is the most remarkable, with the well-known large artificial lake of Tirso destined at one and the same time to irrigation purposes and to the creation of eletric power.

Most splendid of all, and destined to remain particularly famous, also for many historic reasons, is the reclamation of the Pontine Marshes, assumed by the National Association of Ex-Servicemen. On the 28th of August 1931-IX the Royal Decree allocated to the Association a first parcel of land of about 18,000 hectares. On the 7th of November 1931, the work of clearing away scrub was initiated over something like 600 hectares of wooded territory. On the 20th of January 1932-X the first colonial houses were erected, and the work of reclamation of the land was begun. On the 30th of June of the same year the foundation-stone of Littoria was laid; on the 18th of December Benito Mussolini inaugurated the city and with it the first reclaimed zone. On the 15th of August 1933-XI, the Duce laid the

Harvest-time in the Pontine area

Pontine area - Cattle at pasture

Interior of installation for suction-pumps

Pontine area - House for colonists

foundation-stone of Sabaudia; on the 15th of April 1934-XII H. M. the King inaugurated it. At the end of April 1934, 41,600 hectares of soil were braken up. The amount of earth moved amounted to 7,679,000 cubic metres. 416 kilometres of road had been contructed and 1,756 kilometres of canals.

On the 18th of December 1934-XIII Mussolini inaugurated, not the Commune merely, but the Province of Littoria. Over 73,000 hectares of reclaimed land form the nucleus of the new Province which comprises 28 communes and of which the islands of Ponza and Ventotene form a part.

The new Province, which is a living testimony of the gigantic work of redemption and repopulation of the Pontine aerea — a work carried out with unprecedented rapidity — has an extension of 201,170 hectares and population of 215,000 inhabitants of whom 60,000 were already resident in the Pontine area. It therefore occupies, among the other Provinces of the Realm, the 73rd place as regards superficies, the 79th as regards population and the 61st as regards density.

On the 19th of December, the day after the inauguration of the Province of Littoria, the Duce founded a new Commune, Pontinia, which will be inaugurated on the 27th of October of Year XIII. On the same day, the foundation-stone of the fourth commune, Ausonia, will be laid; to be followed, a year later, by the foundation of the fifth Commune, Aprilia.

Mussolini, in his speech at Littoria on the 18th of December said:

« We have inaugurated the 93rd Procince of the Kingdom. In order to realise the importance of the event, it suffices to

reflect for one single minute that, here in this square which, in its name bears the date of March the 23rd, fundamental in the story of Italy, only there years ago the deadly marsh-land reigned. We have pledged ourselves to a stern campaign. We had against us nature, material condition, and — even worse — the scepticism, the mental inertia and the moral cowardice of those who, before beginning the battle, wish to be mathematically certain of the victory; while for us Fascists, the conflict is even more important than the victory; for when the battle is undertaken with resolute firmness, victory is infallibly its crown ».

MARCHING ORDERS

Some days before the inauguration of Littoria, the Chamber of Deputies approved the new law: « Directions for the integral completion of land-reclamation and regulation of the Consortia. » This law amplifies the powers of the Consortia and lays down precise conditions relative to expropriation in those cases where the proprietors are not in a position to carry out the obligations of agrarian reconditioning; and the new system of ownership of the expropriated lands will be directed chiefly to the creation of small holdings for cultivation.

This law is a fitting crown to land-reclamation and provides for the removal of the obstacle of insufficient private participation. White, over a territory of there millions of hectares subject to reclamation by reconditioning, the public works are now complete, or nearing completion, in more than 1,200,000 hectares, a relevant part of this territory « does not yet see a decided start given to the work of reconditioning the land ».

The reason may be looked for in the general crisis from which agriculture is suffering to a marked degree. Financial impossibilities prohibit many proprietors from carrying out the obligation of reclamation. It was impossible to await the falling

due of the terms assigned for the execution of the works on the part of private owners before declaring non-fulfilment of contract and proceeding to expropriation. The reason for this is simple. In this interval, some proprietors would have taken action, and others not. The reconditioning of the land would therefore show a lack of continuity of development which in certain cases might lead to serious consequences, especially in malarious districts. In such zones, the survival of tracts of land not reconditioned and interposed here and there among other tracts can do much harm not alone to the general public but also to those proprietors who, as far as they are concerned, have carried out their obligations to reclaim.

It was therefore necessary to intervene and to intervene with haste, since it was inconceivable that the public works lavishly carried out over exstensive territories by the State should remain insufficient to the ends of the whole integral reclamation. The rhythm and method of the agrarian reconditioning could not depend purely and simply upon the financial possibilities of the actual proprietors.

The Undersecretary for land-reclamation writes as follows:

« If the nature of the agrarian reconditioning considered advantageous demands of the proprietor an employment of capital equal to 100 in a period, let us say of 5 years, it is not enough to recognise that the actual proprietor does not possess it and cannot procure it in that measure in time, in order to resign oneself to the employment of a capital 50 or to spread over 10 years rather than over 5 years the employment of capital 100. To resign oneself, it would be necessary to demonstrate

that there simply does not exist any other way which renders possible the employment of the whole 100 in 5 years. If, however, that other way does exist, then it is our duty to take it without halting before the impossibility of the actual proprietor, by carrying out that transference of ownership of the land which will permit us to take those measures most useful to national ends ».

There is no doubt, then, that the State is bound to intervene by taking the place of the private owners and harmonizing the legitimate interests of these latter with the superior aims of the nation's collective rights. This is the action which the Law voted by the Chamber of Deputies proposes to carry out. By this law, when the private owners are not in a position to undertake the work of reconditioning the land, the State, through the Fascist Institute for Integral Land-reclamation (into which the Association of Consortia of reclamation and irrigation will be transformed) assumes in person the undertaking. The proprietors cede the property to the Consortia, who obtain the necessary capital with the guarantee of the State and under the control of the Institute which, after paying the indemnity due, carries out the works demanded by the integral nature of the reclamation, builds the colonial houses and finally proceeds to the sale of the farms obtained by dividing the land into small holdings.

The farms are sold to peasants who thus constitute a new settlement of small proprietors cultivating the soil. As has been said above, the Consortia provide for the financing of the works of agrarian reconditioning with the State as guarantee, but with the obligation to take up a mortgage in favour of the Treasury on the lands acquired or expropriated for the value of the acqui-

sition or indemnity of expropriation augmented by the foreseen cost, also indirect, of the successive reconditioning of the land.

There remains one last point to be solved — that of the method by which the proprietor shall be indemnified. The solution arrived at is as equitable as anyone could desire. The indemnity of expropriation is fixed by capitalizing the normal net income from the land to be expropriated according to the conditions in which that land finds itself at the time of expropriation. The figures by which capitalization is determined are annually fixed by Royal Decree proposed by the Ministry of Agricolture and Forests, in agreement with the Finance Ministry, and these figures must be chosen in such a way as to permit that the investment of the indemnity in State securities will yield the proprietor an income equal to that which was taken as the basis of the capitalization.

There is no need to demonstrate the imposing nature, and the grandeur of a work such as this. The conception is truly worthy of Mussolini. The new law respects the principle of ownership in favour of the old proprietors up to a scrupulous degree, in the very act in which it favours the formation of a new, vaster and more diffused proprietorship of small holdings. From today the problem of integral land-reclamation is solved in its three-fold aspect — technical, financial and social. The realization, perfect and complete, of many regions in the national territory is now only a question of time.

LAND-RECLAMATION RELIEVES UNEMPLOYMENT

The work of land-reclamation constitutes a radical remedy for unemployment. First, by bringing under cultivation new lands, it tends to increase the demand for agricultural labourers and to settle these men on the land. Secondly, during the carrying out the work of reclamation, it is able temporarily to front unemployment among workmen.

In the first 11 years of the Fascist Régime, the average number of workmen daily employed on land-reclamation and public works has continually increased from 28,117 in 1922-23 to 59,559 in 1932-33.

Calculating for every workman an average of 250 working days per annum, the carrying out of works of integral land-reclamation, during the 11 years of the Fascist Era has assured, an employment of labor which the figures are set out below:

Fascist Era	Annual Budged	Workmen employed daily	Working-days per annum
	—	—	—
I.	1922-23	28,117	7,029,250
II	23-24	19,600	4,900,000
III	24-25	20,252	5,063,000
IV	25-26	13,864	3,466,000
V	26-27	14,145	3,536,250
VI	27-28	21,389	5,347,250
VII.	28-29	28,231	7,029,250
VIII	29-30	39,961	8,740,250
IX	30-31	45,098	11,274,500
X	31-32	52,614	13,153,500
XI	32-33	59,559	34,889,750
			84,229,000

These figures demonstrate, better than any comment, the enormous force with which Fascist Italy is conducting the campaign for the redemption of our soil; a campaign which the Régime has courageoulsy undertaken towards a beter economic and social future of the Nation.

Pontine area - Reclaimed fields

The church at Littoria

Amount in lire of works of reclamation both public and private carried out from 1870 to 1st July 1933 XI.

ANNUAL BUDGET	Hydraulic reclamations, reconditioning of lands, and roads upon reconditioned land.		Systematisation of mountain aereas		Private offers subsidised by the State		TOTAL Public and private works	
	Authorised — millions —	Carried out — millions —	Authosised — millions —	Carried out — millions —	Authorised — millions —	Carried out — millions —	Authorised — millions —	Carried out — millions —
To end of 1921-22 . .	3,001,3	1,720,5	70,3	62,2	—	—	3,071,6	1,782,7
Fascist Era								
I 1922-23	268 –	210,7	18 –	18,1	14,7	14,7	300,7	243,5
II 1923-24	88,5	141 –	12,8	12,7	36,3	36,3	137,6	190 –
III 1924-25	108,4	134,2	10,6	10,6	20 –	20 –	139 –	164,8
IV 1925-26	147,6	178 –	9,1	9,1	48,3	48,3	205 –	235,4
V 1926-27	241,4	181,8	22,1	18,1	88 –	88 –	351,5	287,9
VI 1927-28	569,4	258,7	33,6	30,9	106,5	106,5	709,5	396,1
VII 1928-29	524,1	341 –	41 –	39,8	130,4	130,4	695,5	511,2
VIII 1929-30	702,5	617,1	72,9	42,8	255,7	255,7	1,031,1	915,6
IX 1930-31	569,4	465,2	33,6	34,5	248,5	248,5	851,5	748,2
X 1931-32	566,3	495,1	45,1	34,9	207,8	207,8	819,2	737,8
XI 1632-33	463,5	505 –	55 –	49,8	285,7	285,7	804,2	840,1
General Total	7,250,4	5,248,3	424,2	363,1	1,441,9	1,441,9	9,116,4	7,053,3
Fascist Era	4,249,1	3,527,8	353,8	300,9	1,441,9	1,441,9	6,044,8	5,270,6
Last four years.	2,301,7	2,082,4	206,6	161,6	997,7	997,7	3,560 –	3,241,7

Works of integral reclamation authorized in the 4 years 1929-VII - 1933-XI.

Nature of the work	Authorized in the Annual Budgets (in millions) 1929-30	1930-31	1931-32	1932-33	TOTALS millions of lire
a) *Public Works.*					
Hydraulic reclamation and complementary works of hydraulic defence, roads, irrigation, systematisation in mountain-zones, provision of drinking water and hydraulic systems for same.	699,6	542 –	492 –	426,1	2,159,7
Reconditioning of land of public interest. . . .	2,9	24,7	61,7	32,4	121,7
Roads in reconditioned territories	—	2,7	12,5	5 –	20,1
Systematisation in mountain areas.	72,9	33,6	45,1	55 –	206,6
	775,4	602,9	611,3	518,5	2,508,1
b) *Private works subsidized by the State.*					
Irrigation	84,9	103,4	142,4	153,1	488,3
Rural acqueducts . . .	16,3	41,4	7,–	9,8	74,5
Roads between farms . .	0,5	5,4	5,4	14,4	25,7
Rural centres and buildings in South & islands . .	—	9,1	23,8	27,5	60,4
Breaking up soil by machines	7,9	5,2	5,6	5,2	23,9
Systematisation of small holdings	73,8	26,7	1,5	2,4	130,5
Roman & Pontine areas .	46,6	45,5	10,3	37,2	139,6
Supplying drinking water .	0,1	—	0,9	0,9	1,9
Search for water . . .	3,3	1,5	3,9	1,2	9,9
Mountain pastures . . .	13,3	10,3	7 –	12,4	43 –
Total	255,7	148 5	207,8	285,7	997,7
General Total	1031,1	851,4	819,1	804,2	3505,8

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LAND RECLAMATION SCHEME IN ITALY

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LAND RECLAMATION SCHEME IN ITALY

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AN AGE OLD PROBLEM

In the economic and social history of Italy, two recurring themes are continually to be found, sometimes separately, sometimes bound together. The one is that of the fertility of the Italian soil, the Virgilian "Salve, Magna parens frugum, Saturnia Tellus"; the other is the complaint about the barrenness and depopulation of many parts of Italy, the "latifundia perdidere Italiam" of the Elder Pliny.

There are, or rather there were, barren, marshy and depopulated districts scattered here and there in almost every region of Italy, but two large groups of these, two long wide strips, particularly meet the eye of anyone who consults a fairly detailed map of Italy. The first strip is to the North East, on the Northern Adriatic, the other to the West, on the Central Tyrrhenian sea. The former is like a fan that opens out for about a million hectares (1) to the left and right, (or rather, to the North and South) of the Po, widening on one side towards Lower Venetia as far as the Isonzo, that is, almost to Istria, and on the other side along the foot of the Istrian Appennines as far as the Rubicon, the boundary between Northern and Central Italy.

(1) A hectare corresponds to 2.471 acres.

It is a district rich in splendid scenery, monuments and works of art, and great historic memories: Aquileia, one of the greatest cities of the Empire until its submersion under the floods of barbarian invasions; the Lagoons of Venice with their origins lost in the mist of time and the marvellous rise of the Republic of St. Mark; the Byzantine splendours of Ravenna, the seat of Galla Placidia, of Theodoric, of Narses, the city that has seen exarchs, Archbishops, Longobards, and Frankish Emperors of the Holy Roman Empire.

In this historic region the struggle against the marshes and malaria goes back to ancient times. The Venetian Republic played a major part in it with its Magistrate of Uncultivated Property under whom acted local Corporations, pledged to control the river courses and drain the lands. But, in spite of the efforts of the various governments throughout the centuries, the Kingdom of Italy still found, in the Venetian-Emilian region, vast zones to drain and reclaim.

They were lands lying below sea level or below the level of the river courses that crossed them, whose outflow was barred by sand-dunes. The flow of the water was completely blocked, or, at least, in certain periods, was seriously checked. Thus, the waters became stagnant, and at times rose so as to make the lands only in part fit for cultivation. These districts were sometimes like sea valleys, full of salt water, and at other times like marshland capable of producing only fodder; elsewhere there were poor meadows and pastures of meagre quality, subject to more or less long

1. Sabaudia's first grain crop.

2. Reclaimed land,—Isola Sacra (Rome). Group of farm dwellings.

3. Preparing reclaimed land to receive the first sowing of grain.

system, malaria drove away the workers (who were almost all occasional labourers from the neighbouring mountains and hills) for months together.

In the Tuscan Maremma the struggle against these unfavourable conditions had been already carried on in past centuries, and especially by the Grand Dukes of the Lorraine dynasty, sometimes with remarkable success. The Motu proprio of Leopoldo II of the 27th November, 1828, is known to history. However, towards the South conditions were still very serious, especially in the Valleys of the Osa and the Albegna, that from every point of view showed most primitive conditions due to the gravity of malaria, and hydraulic disorder because of the system of alternating pasture with very poor corn crops, and because of the very low figure of the permanent rural population.

In Latium one must distinguish the Roman Campagna, properly so called, from the Pontine Marshes. For the conditions in the former, in a period preceding the recent transformations, one cannot do better than quote a page of Oriani written half a century ago, but still vivid and full of topical interest: — « A lugubrious sight: wherever I turned I saw bare, boundless, irregular plains; at wide intervals a a few shrunken oaks looking like miserable survivors of a great upheaval, as if the genius of destruction had spared them as a refuge for the ravens. In the many little ravines, on the banks of winding swamps, and on the little knolls, the rushes and reeds were murmuring, and their murmur, hardly heard above the noise of the steam-engine, lost itself in the fruitless search for an echo.

"Endless fences shut in enormous stretches of land intersected by ditches and streams; then, every now and then, would rise huge hay stacks arranged in lines or in semicircles, and as solitary as islands in the ocean; and small shepherds' huts or enormous sheds for the herds.

"Far away a brown streak cut across the meadow land and the horizon. It was a dry aqueduct with its arches broken by the passing of the ponderous centuries, or worse, by the carelessness or fury of men, an impressive symbol of past grandeur, a glorious sign of a civilisation that has gone down into the sepulchres of history".

This description refers particularly to the Roman Campagna, but in its essentials it can be applied to the Pontine marshes also. Here the vegetation was more luxuriant in certain districts, but the depopulation was still greater. As an eloquent testimony of the ever greater toll taken by malaria in the course of the centuries, the little city of Ninfa, the "Pompei of the Middle Ages" as Gregorovius called it, reveals to the astonished traveller its walls, its forsaken squares covered with wild plants which in the spring open out into marvellous bloom. In that region the great landed estates predominated, cultivation was not lacking, but in a very primitive form and chiefly for pasture. During the centuries attempts at reclaiming the land had often been made, perhaps, even since the time of Appius Claudius, at the end of the 4th Century B.C.; Julius Caesar, Augustus, Nerva, Trajan, Theodoric, and later on, a series of Popes—Boniface VIII, Martin V, Sixtus V, and above all Pius VI, had set their hands to the task which was, however, never completed.

8. Reclaimed land at Sinigo. Raised channels carrying off low lying water to collectors.

THE FASCIST CONCEPTION

It has been said that the history of land reclamation constitutes, in a certain measure, the history of the Italian nation. Since the most ancient times the populations of the Peninsula, from one generation to another, have had to snatch the soil, a few feet at a time, from the destructive fury of the floods, from the marshes, from malaria, and from drought. This is especially true for the great Adriatic district where the inhabitants of the Po Valley try to hold the land against the adverse conditions prevailing there.

Once the kingdom of Italy was established, the question became more pressing, not only as a series of isolated local problems, but in its importance and entirety as a national problem. Therefore, it was first considered chiefly as a hydraulic problem to be solved for purposes of hygiene. The first Baccarini law on hydraulic drainage which goes back to 1882 was intended to combat malaria, and was based on the presumption that, to achieve its ends, it would be enough to eliminate the great marshes by means of canalisation and levelling works. As it happened, hydraulic drainage at this period was particularly advantageous for the districts of the Po Valley, instead of serving districts further south which suffered even more from the scourge of malaria.

This does not mean that the economic and social aims of agricultural produce and colonisation, as distinct from drainage and hygienic reform, were disregarded. Very often in the speeches of those who were interested in public welfare recurred the theme of those untilled lands which, when once made fertile, were to give a home and livelihood to those numerous Italians who were forced instead to emigrate. But at that time the State, when considering the reclamation of uncultivated and swampy ground, clearly divided the undertaking of this magnificent work into two sections, one public and one private : the State recognised that it was not possible to expect from the private initiative of single or associated land-owners the carrying out of all the necessary works, and took over a part itself. These are the works that are called public works. The State, directly or indirectly, carries them out with its own funds, sometimes asking the land-owners to contribute towards the expenses. Other works are done by the private land-owners, and the State gives them a free hand. The State builds roads, drains swampy ground, regularises the course of torrents, etc., then expects the land-owners to do the rest, that is, to put the ground in order, provide the less important farm roads, build roads and cattle-sheds, and initiate the consequent more intensive forms of agriculture. This is left to individual judgement, and the State takes no share in it. On the one hand, therefore, we have public enterprise limited to the carrying out of certain work, and on the other hand private enterprise and the transformation of property. It would be difficult to establish the criterion by which some works are considered

public and others not. Certainly, those aims which I spoke of above as connected with public welfare cannot serve as a criterion of distinction since they could only be achieved through the carrying out of public and private works together, or, more precisely, by means of those new forms of agriculture for which the said private works are as necessary as the public ones.

This decided separation of work and responsibility meant that, even when the State carried out its own work, private individuals in many cases did not do their part, or at least proceeded with extreme slowness. This was due to various reasons, and certainly in part to the cost of these works which could not be immediately rewarded in an increase in income from the property. The State did, however, try to make up for this with financial subsidies for the private works and with credit loans at favourable terms, but not always with success. The identification of the natural man with the homo economicus is continually disproved particularly in the rural world, and especially in this field of transformation of landed property. One can, in fact, constantly state that consciously, and not through a mere error of foresight, land-owners and agriculturalists carry out improvements on their land with quite inadequate funds, while others do not even attempt them, even where they would be very advantageous. Typical is the case of the great land-owner who lets out his land for the traditional alternation of corn crops on (an extensive scale) with pasture, and it is difficult to persuade him to undertake a radical transformation, even if presumably profitable.

Conclusion: the financial advantages that would accrue to the private owner who used his own land transformation schemes to complete the State enterprise does not always suffice to induce him effectively to fulfill his own part. What could the liberal State then do? It could apply the Institution of Expropriation for the Public Good, declaring private land transformation compulsory for the completion of the public works schemes, and even decreeing confiscation in the case of recalcitrant land-owners. As a matter of fact, such a proceeding was rarely resorted to because the very mechanism of the State, and the criterions guiding the action of the State, no less than that of private individuals, and the difficulties in the way of State transformation of the expropriated lands, conspired to render this confiscation threat inactive. However, the State found itself in this dilemma: it had to adopt either a liberal solution, that is, to abandon land reclamation to the free initiative of single and associated land-owners, or a socialist solution, that is, the taking over of all land reclamation schemes by the State.

To overcome this dilemma, both horns of which presented serious disadvantages, it was necessary to coordinate public and private activity in the national interests of social welfare, so that private activity and that of State organs were combined and fused so as best to further the aims of the nation as a whole.

Hence the Fascist conception of land reclamation which combines all the hygienic, economic and social aims. No longer are considerations of private loss or gain taken into account in determining the advisability of the work. It may

9. Reclaimed land at Caorle, Portugruaro (Venice).
Work carried out in year XII, Era Fascista. New fish breeding establishment at Valle Zignago.

10. Panorama of Agricultural Station of Alberese (Grosseto).

11. As it used to be!

12. Pontinia. A Farm with dwelling. As it is now!

be that, the private owner, free to invest his own capital as he wishes and actuated only by his own financial interest, does not choose to invest it in land reclamation as being less profitable. The nation, on the other hand, in its unity and continuity will find a great reward for the immediate financial sacrifice. From this point of view one can no longer argue that the private individual is interested only in the increase of the income from his estates and that the State is concerned only in the other advantages (hygienic, social, etc.,) of land reclamation; the whole nation will be interested in the increase of wealth, while the private citizen will consider it to be to his own advantage to belong to a healthier and stronger social organism.

Land reclamation is then one of the main tenets of the agricultural policy of the Régime which aims at the enrichment and re-population of the rural districts. Economic and moral motives play a large part in this policy. There exist, in the economic structure of the nation, some supporting pillars that must not be allowed to fall, such as, for instance, the production of essential foods: bread, milk, meat. Moreover, a numerous and thriving rural population means also more numerous families, a greater attachment to property, the home and the family, and an intensified incentive to thrift. Rural society is a reservoir of strength without which the cities would end by fossilizing, growing old, and losing their population.

The Fascist Régime has devoted its greatest energies and its greatest effort of will to the land, because the land is the touchstone, the supreme test in which the character

of peoples as well as that of individuals is proved. The land takes man in his entirety and imposes on him duties and responsibilities which transcend his own ephemeral personality, because they concern men of the future even more than men living to-day.

It is a great educator, a school of self-sacrifice and virtue because risk is constant, unforeseen and variable as the forces of Nature. The first reward of agriculture is the consciousness of having done one's duty, the certainty that one's industry is in the nature of a mission. In its profound intuitive sense of the world and of life antiquity raised agriculture to the rank of a religious rite, with its own gods, ceremonies and priests.

These social and moral aims of agricultural policy are seen particularly clearly in two instances,—in the provision made for life in the mountainous districts, and in measures to promote colonisation. Mountain communities give pre-emminent expression to the rural virtues: attachment to the land, to the family, to religion, endurance of hardship, soberness and steadiness. It has been well said that "the economic re-organisation of life in a mountain community is the crowning miracle of a series of privations and sacrifices rewarded by satisfactions, all of a psychological nature», since land in the social nucleous of a mountainous district represents above all a sense of life, of ownership, of mastery, of independance, and of creation. The economic life of the mountains is a particularly obvious case of that inter-dependance which is the foundation of the new schemes of land reclamation. A policy of reafforesting the mountains must be considered, together with the other exigencies of the moun-

nain dweller, particularly with the need for pasturage and, therefore, for meadows and for fodder crops.

Colonisation is thus so bound up with the reclamation of land that the first category of lands to be reclaimed, that in which the State contributes in a larger measure, precisely consists of those lands in which the chief aim of reclamation is colonisation. Here, more than ever, we see that the question of financial profit and loss does not prejudice the position. It may well be true that it would be possible by other means to get bigger profit on capital sunk in the soil, but the investment which furthers the aims of colonisation is required by the State for the sake of the national advantages which compensate for the lesser profit on the capitals invested. As for the choice of the lands destined for colonisation, since the Fascist Régime believes in the fundamental importance for the nation's welfare of private ownership of the land, it preserves private ownership when it is not a case of lands that have always been social or State property, but makes the transformation of the land compulsory. Only if the land-owner does not fall in with this compulsory scheme, are his lands expropriated. In many cases it may be that the owners themselves undertake the sale of lands burdened by the cost of colonisation. As regards the agrarian schemes to be initiated on the reclaimed territory, it is found that the national aims of transformation and colonisation are better served, not by working units composed of single individuals, but by peasant families who have long been connected with a special kind of work and have their own interest in the production.

13. Modern farm dwelling at Littoria.

14. Modern sanitary buildings spring up in the reclaimed land centres.

15. The Duce cuts the first sod for the new City of Pontinia.

16. The church of San Marco, Littoria.

THE MUSSOLINI LAW

But we must now briefly consider the actual legislative measures for land reclamation.

First of all, the law of the 30th December, 1923, No. 3256, notably enlarged the conception of reclamation, for it recognised the necessity of not limiting land-reclaiming activity in the marshes merely to draining them. It insisted that there should be included in hydraulic reclamation, and subiect to its control, other complementary works aiming at ensuring the hydraulic results of drainage by the re-organisation of mountain and valley systems; at guaranteeing, by means of the lesser reclamation, the hygienic efficacy of the drainage, by reforming and improving prevailing conditions by means of roads and drinking water and irrigation supplies, so as to facilitate a more intensive utilisation of the lands reclaimed.

This law was completed by another of the same date, No. 3267, which entrusted to the State a series of works aiming at the hydro-geological re-organisation of the mountain districts.

Even these laws, however, were still limited to the reclamation of marshy lands and lands without out-flow.

Two later laws, on the 19th March, 1924, and the 29th May, 1925, extended the field of reclaiming activity to those lands which, through faulty hydrogeological forms or through their inaccessibility or lack of irrigation, or, in general, owing to serious reasons of a physical or social order, were still very backward in agriculture and were capable of being transformed with strikingly good results for the general benefit. Between 1925 and 1927 there followed another series of laws which aimed at encouraging clearing work,motor-ploughing, and electrical methods of agriculture, and at organising a system of credit in favour of agrarian improvements, at increasing government contributions to works of irrigation, and at encouraging the building of rural centres.

The law in which the total land reclamation schemes found their most complete expression was that of the 24th December, 1928, VII, which takes the name of the Mussolini Law and has been called " the fundamental law of the Régime ". This has filled in the gaps of preceding legislation so as fully to solve the problems of drinking water supplies and of the roads necessary for the intensified agricultural activity, of the small rural market towns and buildings, and particularly provides for the adequate employment of the financial means necessary for the application of the various reclamation laws, now grouped together by the new law under the name of total reclamation of the land schemes. The scheme of works covered by this law reaches a figure of about seven milliard lire, of which four-a-half milliards are to be used for hydraulic reclamation and the relative complementary works, and the rest for irrigation, construction of small

market towns, and buildings, rural aqueducts and farm roads.

Finally, came the royal decree of the 13th February, 1933, XI, to coordinate all the existing measures, to give a further organisation, and to establish a juridical control over the total reclamation of the land. This decree distinguishes between reclamation, properly so called, and improvements in landed property. The former consists of a complex series of works to be carried out in co-ordination, according to a general plan, in districts classified and marked out by the State and called " comprensori ", or reclamable lands to serve hygienic, demographic, economic, and social aims of primary importance.

From these works there results a radical transformation in the organisation of production. On the other hand the work of improving landed property is carried on for the benefit of one or more estates independent of any general reclamation scheme. The reclamable lands are in their turn divided into two categories, the former comprising those which have an exceptional importance, particularly for purposes of colonisation, the second comprising all the others. In both categories, there are works of State competence and works of private competence; the former are carried out by, and at the expense of, the State with the help of contributions from the owners; the owners are compelled to carry out works of the second category at their own expense but with a financial subsidy from the State. The percentage of the expenses borne by the State-controlled works is higher in the reclamable lands of the former category than in those of the second.

There is also work (such as re-organisation of mountain systems), the expenses for which are assumed solely by the State. As for the State subsidy for works of private responsibility, it amounts, normally, to one-third of the expense, but in special cases it may be increased up to 45 % or even to 75 %. Mereover, there has been arranged for these private owners a special credit loan system on the part of deposit and loan banks and other credit institutions.

In every reclamable zone are constituted one or more corporations of owners. These corporations are set up by a majority consent which is either explicit or assumed according to certain criteria. The corporations can also in exceptional cases be nominated. Their task is in all cases the maintenance and expedition of reclamation work, but they may also be granted the concession of works dependent on the State when the latter does not provide for these directly. They must also undertake the work within the competence of private land-owners at the request of the latter, who must continue to provide for the necessary expenditure in the measure and manner laid down by the law. To-day are in existence about 1,700 Corporations and Trusts or physical juristic persons that control a total service of about seven million hectares.

In addition to these, particular mention should be made of the National Association of Ex-Service Men which, under the supervision of the President of the Council, provides for the purchase, (where necessary using compulsion), of reclamable lands, equips them for intensive agriculture and shares them out among families of agricultural ex-service men.

17. Littoria : The Post Office.

18. A water elevator at Sabaudia.

19. Pontinia : The Municipal Palace.

20. Sabaudia : O. N. B.

The Government body which directs and controls the whole of this great work is the State Under-Secretaryship for total land reclamation, which is dependent on the Ministry of Agriculture and Forests. The Under-Secretary is aided by a group of executive and consultative bodies.

RESULTS OBTAINED

What are the total results obtained up to date?

From 1870 to 1922 the reclamable lands in which the State has carried out works reached a total extension of 1,390,981 hectares. During the following fourteen years of the Fascist Régime this total extent has amounted to 5,106,938 hectares. As regards expenditure, and considering the figures by the existing Gold Standard from 1870 to the 1st July, 1936, 6,897.8 million lire have been spent on public reclamation works. Of these, 5,177.3 million lire belong to the Fascist Era, and 3,739.9 to the last seven years alone, as a result of the application of the Mussolini Law. One must add that during the last fourteen years the State has granted subsidies for improvements on private landed property up to the amount of 2,366.7 million lire.

Over a surface of about 2,205,746 hectares the carrying out of public works is already completed or near completion. In the remaining 2,901,192 of the total surface which has been worked over the operations are less advanced.

A recent enquiry into the results of reclamation work in the economic and social field enables one to see clearly the most striking consequences of the reclamation, and to

predict with certainty the importance of the benefits that will accrue from the completion of the enormous reclamation scheme already in operation.

Selecting some agrarian agencies situated in reclamable lands—agencies representing not exceptional conditions but the average conditions resulting from reclamation—we have noted the figures of the value of the gross, saleable produce, of the number of hours of rural labour employed per year per hectare, and the percentage of this rural labour represented by permanent workers, (small rentholders or owners, part-time workers, workers on a fixed wage, or peasants belonging to intermediary categories), as opposed to the number of casual workers.

These figures, taken for the two periods before and after the reclamation, are very significant in summing up economic, demographic, and social effects of the improvements. They are reported in the chart on the following page. It is apparent that in the cases considered the increase in the value of the gross saleable produce has even reached the figure of 2,438 as opposed to the initial figure of 100, and that the increase in manual labour employed per hectare has risen from a minimum of 100 to 208, to a maximum of 100 to 3,618.

Of particular importance is the reduction in casual labour which diminishes more or less rapidly, and, in fact, in seven cases is reduced to zero, signifying the permanent establishment of the worker on the land.

21. Sabaudia : Employees' dwellings.

22. Mussolinia.

23. Farm dwellings at Maccarese.

24. Sugar refinery at Littoria. (Constructed during the economic siege).

Produce, Labour Employed, and Reduction of Casual Labour before and after Reclamation.

Reclamable Lands	Value of Produce per Hectare			Labour Employed per Hectare			Percentage of Casual Labour	
	Initial lire (1)	Final lire (1)	Rate of Increase	Initial (1)	Final (1)	Rate of Increase	Initial hours (1)	Final hours (1)
VENETIA								
Sinistra Adige ..	1422	5560	391	277	1453	524	16	0
Caposile	265	2697	1018	111	852	767	91	3
Ongaro Inferiore	88	1860	2114	46	525	1141	100	0
Bandoquerelle .	353	1460	414	90	287	319	100	0
EMILIA								
Bonifica Ferrarese	435	2162	497	173	623	360	100	15
Basso Ravennate	1976	6508	329	328	1677	511	0	0
Gallare	335	1930	576	94	708	753	95	24
Parmigiana Moglia	516	3012	583	139	946	680	0	24
TUSCANY								
Piano di Cecina.	804	2830	352	176	545	309	71	1
Bonifica Grossetana	496	1558	314	71	257	362	74	12
LATIUM								
Isola Sacra ...	119	1130	949	90	472	524	89	5
Agro Romano .	712	1940	272	135	540	400	38	3
CAMPANIA								
Pantano di Sessa	100	2257	2257	27	305	1130	92	9
Prima zona vicana	612	3284	536	206	430	208	43	1
APULIA								
Tavoliere di Foggia	318	1846	580	131	634	484	59	51
Murge Baresi .	200	1463	731	197	1769	898	58	21
Salina Grande ..	1314	7446	567	352	1037	294	89	0
Taranto	355	1100	309	230	1000	435	70	35
Estrema Salento	—	—	—	—	—	—	—	—
SARDINIA								
Terralba	62	1512	2438	22	796	3618	100	0
Sanluri	131	1010	711	40	337	842	5	0

(1) The initial figures refer to the situation before reclamation: the final figures to the situation after reclamation.

The multiplied fertility of the land, the improvement in living conditions of agricultural labourers, the progressive control of surface water, have had a beneficial effect on the incidence of malaria, which is gradually disappearing through the indubitable, but not yet sufficiently explained, influence which the more intense cultivation of the soil has on the violence of this endemic disease. The population resident in the reclaimed lands has proportionately increased.

In the Province of Ferrara, half the agrarian surface of which has been reclaimed, the inhabitants, numbering about 84 per square kilometre before the reclamation, now number about 140.

In some reclaimed zones of the Province of Venice, (Cavazuccherina reclamation), not only has the population been tripled, but an amazing difference in the relation between scattered population and aglomerated population has been shown, because whereas the latter numbered 553 inhabitants and the former 2,352, to-day the figures are 1,011 for the aglomerated population and 9,490 for the scattered population.

It is hardly necessary to mention the Pontine Marshes where the Régime is carrying out the most magnificent reclamation enterprises which had been attempted in vain by emperors and pontiffs.

The Pontine Marshes, which in the summer afforded hospitality to a few hundred men gathered together in miserable huts and exposed to the most serious risks of malaria infection, to-day see new cities arising, new houses springing up all round, and a population of about 60,000 inhabitants, workmen and farmers.

Among the greatest works in hand or already completed, we must mention in the Adriatic zone the works of estate transformation in the great reclamable land of the Bassa Friulana, (70,000 hectares) ; the reclamation works of Burana (same area) ; the Parmigiana Moglia (74,000 hectares) ; the Cremonese-Mantovana (30,000 hectares), the Padano-Polesano di Rovigo (66,000 hectares). In Tuscany we must mention the reclamation effected at Viareggio, at Massaciuccoli, in the northern Pisan plain, and in the southern Pisan plain with the river basins of Tombolo and Coltano. In the Tuscan Maremma, properly so called, we must draw attention to the reclamation of the plain of Grosseto, (45,000 hectares) which comprises that of the Alberese, carried out by the Ex-Service Men's Association. In Latium, the lower alluvial plain of the Tiber contains three hydraulic reclamation zones, worked with hydraulic plants at Ostia, Isola Sacra, Porto and Maccarese (totalling more than 20,000 hectares). The second of these has also been carried out by the Ex-Service Men's Association. In southern Italy important reclamation work is carried out in Calabria at S. Eufemia, Sibari, Alli-Punta delle Castelle, where the conditions are peculiarly difficult because of the draw-backs in the mountain and water system.

In Apulia, also, the problem of the reclamation of Tavoliere (400,000 hectares) has already been attended to ; the hydraulic question has been complete solved ; malaria has been exterminated ; and the land reclaimed and colonised. In Sicily the greatest hydraulic reclamation scheme is that of the plain of Catania (22,000 hectares), but in

the greater part of the island the total reclamation schemes depend, not upon hydraulic drainage, but on the transformation and colonisation of the great estates. In Sardinia, the most important is the reclamation of Campidano di Oristano with the well-known great artificial lake of Tirso destined to serve at the same time for irrigation purposes and as a source of electrical power.

More magnificent than all these works, and destined to lasting fame also, for many historic reasons, is the reclamation of the Pontine Marshes undertaken by the National Association of Ex-Service Men. On the 28th August, 1931, IX, a royal decree assigned to this body a first zone of about 18,000 hectares. On the 7th November, 1931, X, began the work of clearing about 600 hectares of forest land. On the 20th January, 1932, X, were built farm buildings, and the work of reclamation began. On the 30th June of the same year was founded Littoria, and on the 18th December, it was inaugurated by Benito Mussolini, and with it the first reclaimed zone. On the 5th August, 1933, XI, the Duce laid the foundation stone of Sabaudia; on the 15th April, 1934, XII, it was inaugurated by His Majesty the King. At the end of April, 1934, 41,600 hectares had been cleared: soil shifted amounted to 7,679,000 cubic metres. There were 416 kilometres of roads, and 1,756 kilometres of canals.

On the 18th December, 1934, XIII, Mussolini inaugurated what was no longer the commune, but the province of Littoria. No fewer than 73,000 hectares of reclaimed land formed the nucleous of the new province which comprises 28 communes and the islands of Ponza and Ventotene.

The new province — a witness to the gigantic work of the recovery and repopulation of the Pontine Marshes carried out with a rapidity without precedent in history by the Fascist Régime — has an extent of 210,170 hectares and a population of 215,000 inhabitants, of whom 60,000 were already resident in the Pontine Marshes, and, therefore, among the other provinces of the Kingdom, it takes 73rd place for extension, 79th for population, and 61st for density of population.

On the 19th December, the day after the inauguration of the province of Littoria, the Duce inaugurated a new commune, Pontinia, the same day founding that of Ausonia, to be followed in a year's time by the foundation of Aprilia. Mussolini, in his speech of the 18th December at Littoria, said: " We are inaugurating the ninety-third province of the Kingdom. To realise the importance of this event, it is enough to reflect for a moment that here in this square which takes its name from the date of the 28th March, a date of fundamental importance in the history of Italy, only three years ago there stretched the deadly marshes. We have waged a very hard battle. We had to face Nature, material difficulties, and, moreover, the scepticism, the mental inertia, the moral cowardice of those who before beginning the fight wished to be mathematically sure of victory, while for us Fascists the fight itself is more important than the victory. Because when the battle is begun with an iron will, it is unfailingly crowned with success ".

LAND RECLAMATION AND UNEMPLOYMENT

Land reclamation, besides being a radical remedy for unemployment, because the new lands rendered fit for agriculture lead to an increased demand for agricultural labour, and to the permanent settling of workers on the land, also, while the work is being carried out, ensures a temporary absorption of unemployed labourers.

In the first fourteen years of the Fascist Régime, the average number of workers employed daily in reclamation work of State competence, has continually increased from 28,117 in 1922-23 to 74,484 in the financial year 1934-35.

Calculating an average of 250 annual working days for every labourer, the carrying out of the total land reclamation scheme during the fourteen years of the Fascist Era has provided for employment as shown in the following chart :

Fascist Era	Financial Year	Labourers employed daily	Annual working days
I	1922/23	28,117	7.029,250.
II	23/24	19,600	4,900,000.
III	24/25	20,252	5.063,000.
IV	25/26	13,864	3,466,000.
V	26/27	14,145	3,536,250.
VI	27/28	21,389	5,347,250.
VII	28/29	28,231	7,057,750.
VIII	29/30	39,961	8,740,250.
IX	30/31	45,098	11,274,500.
X	31/32	52,614	13,153,500.

Fascist Era	Financial Year	Labourers employed daily	Annual working days
XI	32/33	59,559	14.889,750.
XII	33/34	71,586	17.896,500.
XIII	34/35	72,484	18,121,000.
XIV	35/36	43.502	14.888,750.
			135,363,750.

These figures are the best way to demonstrate the tremendous effort which Fascist Italy makes to wage the great campaign for the complete recovery of our land, a campaign that the Régime has valiantly undertaken for the sake of a better economic and social future of the nation.

Expenditure in Lire (According to Present Gold Standard) of State and Private Reclamation Works from 1870 to 1st July, 1933, XI.

Financial Years		Drainage, Land Transformation, and Roadmaking for Reclaimed Lands		Re-organisation of Mountain Zones		Private Offers Subsidised by State		TOTAL State and Private Works	
		Authorised — millions —	Executed — millions —	Authorised — millions —	Executed — millions —	Authorised — millions —	Executed — millions —	Authorised — millions —	Executed — millions —
Up to 1921-22		3,001.3	1.720.5	70.3	62.2	—	—	3,071.6	1,782.7
E. F. A.	I (1922-23	268	210.7	18 –	18.1	14.7	14.7	300.7	243.5
idem	II (1923-24)	88.5	141 –	12.8	12.7	36.3	36.3	137.6	190 –
idem	III (1924-25)	108.4	134.2	10.6	10.6	20 –	20 –	139 –	164.8
idem	IV (1925-26)	147.6	178 –	9.1	9.1	48.3	48.3	205 –	235.4
idem	V (1926-27)	241.4	181.8	22.1	18.1	88 –	88 –	351.5	287.9
idem	VI (1927-28)	569.4	258.7	33.6	30.9	106.5	106.5	709.5	396.1
idem	VII (1928-29)	524.1	341 –	41 –	39.8	130.4	130.4	695.5	511.2
idem	VIII (1929-30)	702.5	617.1	72.9	42.8	255.7	255.7	1,031.1	915.6
idem	IX (1930-31)	569.4	465.2	33.6	34.5	248.5	248.5	851.5	748.2
idem	X (1931-32)	566.3	495.1	45.1	34.9	207.8	207.8	819.2	737.8
idem	XI (1932-33)	463.5	505 –	55 –	49.4	285.7	285.7	804.2	840.1
idem	XII (1933-34)	575.6	543.4	51.9	47.7	282.9	282.9	910.4	874 –
idem	XIII (1934-35)	574.3	615.9	58 –	56.2	358.1	358.1	990.4	1.030.2
idem	XIV (1935-36)	433.6	490.2	34.1	37.7	283.8	283.8	751.5	811.7
	General Total	8.833.9	6,897.8	568.1	504,7	2,366.7	2.366.7	11.768.7	9,769.2
	Fascist Era	5,832.6	5,177.3	497.8	442.5	2,366.7	2,366.7	8.697.1	7,986.5
	Last 7 years	3,885.2	3,731.9	350.6	303.2	1,922.5	1,922.5	6.158.3	5.957.6

Total Land Reclamation Work Authorised in Four Years
1929 *VII to* 1933 *XI*

Nature of Work	Authorised in the Financial Years 1929-30 millions —	1930-31 — millions	1931-32 millions —	1932-33 millions —	TOTAL in millions —
(a) *State Works.*					
(1). Hydraulic drainage and supplementary works of hydraulic defence, roads, irrigation, organisation of mountain districts, drinking water supplies and hydraulic organisation connected with them . . .	699.6	542	492	426.1	2159.7
(2). Land transformation in public interests. .	2.9	24.7	61.7	32.4	121.7
(3). Roads for transformation of landed property	—	2.7	12.5	5	20.1
(4). Organisation of mountainous zones . . .	72.9	33.6	45.1	55	206.6
	775.4	602.9	611.3	518,5	2508.1
(b) *Private Works Subsidised by State.*					
(1). Irrigation	89.4	103.4	142.4	153.1	488.3
(2). Rural Aqueducts . .	16.3	41.4	7	9.8	74.5
(3). Farm Roads	0.5	5.4	5.4	14.4	25.7
(4). Small market Towms and Farm Buildings in the south and in the Islands	—	9.1	23.8	27.5	60.4
(5). Mechanical clearing .	7.9	5.2	5.6	5.2	23.9
(6). Lesser land re-organisation	78.3	26.7	1.5	24	130.5
(7). Reclamation of Roman Campagna and Pontine Marshes . .	46.6	45.5	10.3	37.2	139.6
(8). Drinking water supplies	0.1	—	0.9	0.9	1.9
(9). Water research . . .	3.3	1.3	3.9	1.2	9.9
(10). Mountain pastures . .	13.3	10.3	7	12.4	43
Total	255.7	148.5	207.8	285.7	997.7
General Total	1.031.1	851.4	819.1	804.2	3505.8

Total Land Reclamation Work Authorised in Seven Years 1929 VII to 1936 XIV

NATURE OF WORK	Authorised in Financial Years							
	1929-30 — millions	1930-31 — millions	1931-32 — millions	1932-33 — millions	1933-34 — millions	1934-35 — millions	1935-36 — millions	Total — millions
a) *State Works.*								
1. Hydraulic drainage & works of Hyd. defence, roads, irrigation, org. of mountain zones drinking water supplies, hyd. organisation .	699.6	542	492	426.1	566.8	574.3	433.6	3.885
2. Land transformation in public interest . .	2.9	24.7	61.7	32.4				
3. Roads for transformation of landed property		2.6	12.5	5	8.8			
4. Org. of mount. zones.	72.9	33.6	45.1	55	51.9	58	34.1	350.6
Total	775.4	602.9	611.3	518.5	627.5	632.3	467.7	4.235,6
b) *Private Work Subsidised by State.*								
1. Irrigation. . .	89.4	103.4	142.4	153.1	69.5	61	17.8	646,5
2. Water Research	3.3	1.5	3.9	1.2				
3. Rural Aqueducts	16.3	41.4	7	9.8	27.3	9	9.6	120.4
4. Farm Roads .	0.5	5.4	5.4	14.4	14.7	34.9	24.8	100.1
5. Small rural Towns & Buildings	—	9.1	23.8	27.5	61.6	162.9	166.3	451.2
6. Mechanical clearing. . . .	7.9	5.2	5.6	5.2	1.1	11.4	10.4	46.8
7. Small reclamation works. .	78.3	26.7	1.5	24	11.6	15.7	16.4	176.2
8. Plantations . . improvements .	—	—	—	—	2.5	2.4	4.7	9.6
9. Recl. Roman & Pont. Marshes.	46.6	45.5	10.3	37.2	70.4	24.8	8.8	243.6
10. Drinking Water supplies. . . .	0.1	—	0.9	0.9	0.9	3.6	2	8.4
11. Mountain Pastures.	13.3	10.3	7	12.4	18.1	25.1	16.5	102.7
12. Electro - Agric. Applications .	—	—	—	—	5.2	7.3	6.5	19
Total	255.7	248.5	207.8	285.7	282.9	358.1	283.8	1.922,5
General Total	1,031.1	851.4	819.1	804.2	910.4	990.4	751.5	6.158.1

INDEX

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"Hill Country" north of Rome

This area is much the same as that seen between Florence and Rome. Much of the land is rolling with volcanic deposits, limestone and loess and small alluvial valleys. The farmers live mostly in the beautiful, old

Figure 72. View of Sutri, a hill town north of Rome.

"hill town" and cultivate the land about. Except for the areas developed from the old marine clays there is very little erosion although farming is carried up very steep slopes -- that is, slopes that would be considered steep in America. The steepest slopes are in trees, apparently well cared for. In a few places I noted terraces of the wall type but only rarely was there

Figure 73. Women wash clothes together at the edge of Sutri.

farming on the contour. In most places the rows ran directly up and down the hills. Much of the best land is on the terraces, undulating or gently rolling. Most of the soils appeared to belong with the Brown Forest group or weak Gray-Brown Podzolic. Much of the soil has apparently been farmed for many centuries with great improvement in productivity over that which it had in the virgin state. As near Florence, the land

Figure 74. View near Lake Bolsome, a hill town.

Figure 75. Terraces near the hill town shown in Figure 74.

is largely used in small rectangular fields of 1 to 3 acrres, bordered by fruit trees and grapes, and planted to wheat mainly, then oats, alfalfa, etc.

Figure 76. Rural scene near Parugi, Italy. Small farms of fruit and grain.

Consorgio Bonifica Val D'Orica

Here is a large valley of rolling land developed from old marine clays and geologically very much like the Dakota badlands. The land has been used in the past for uncertain

Figure 77. A hill town north of Sutri.

Figure 78.A view of Radicofuni, old fortress between the Papal States and the Republic of Siena.

grazing and some scanty farming. Many roads and dams are being built and the whole area developed for an agricultural community. Even small hills are being leveled in order to prepare the land for use. The state pays the cost for

Figure 79. This thin, eroded silty clay soil, developed from marine clays, is being leveled and used for farms.

the main roads and the large flood control dams and 38% for new farm homes, small dams, and side roads.

In the whole project there are about 125,000 acres and about 12,000 people of whom 2,000 are owners, but most of the land is in the hands of a small number of large owners. Since the 14th century the general system of one-half sharing has been followed. In 1935, 80% of the people were illiterate. It requires a 60 % vote of the owners to initiate a plan

which, when approved by the state, is obligatory upon all. Only the owners have a vote, not the tenants. The old villages were on the hill tops but the new ones are below. Also there are many new scattered farms.

Figure 80. A view in Val D'Orica. Farm described is in middle left. The home of the Marchese Antonio Origo is in center background. Most of the land shown in this picture has been built recently. Compare with the view in Figure 81 showing land not treated.

I visited one of these farms which had been developed on a low side hill. The house and barn (together) is built of stone--built for 300 years at a cost of 85 to 100 thousand lira. In the lower part is (1) cellar for wine and food; (2) a large tool room; (3) feed room, and (4) stable (14 x 20 feet) for cattle, mostly for work; and (5) a pen for sheep.

A small building at one side has a place for pigs. Upstairs are the rooms for the family: 4 bedrooms, 1 living room with very large fireplace (the only heat), 1 small parlor, 1 buttery, and 1 small cheese room. All was very clean and neat. In the yard was a well and well kept compost heap of manure on cement foundations. The manure is mixed with a small amount of soil.

For vines and olives, put in by the owner, the land is worked for a meter in depth and stone drains put in directly beneath the plants. All the stones are removed from the soil, if any, in this process. It costs about 25,000 lira per hectare to make these plantings. The vines are treated each three years as follows: (1) chemical fertilizers, mainly P and N, (2) green manure, and (3) stable manure.

In addition to olives, grapes, pigs, sheep, and cattle, he produces wheat, horse beans, and alfalfa besides some garden crops, including potatoes.

Figure 81. Another view of the valley.

The soil here is young, skeletal clay, erosive and low in nitrogen and organic matter. About 5 quintals per hectare of 18 to 20 percent superphosphate is used and 1 quintal of sodium nitrate.

Many large concrete dams are being built for erosion control. On the hillsides stone check dams are being built as has been done in Tuscany for many, many years.

I visited a new school, supported 89½% by the State. The children looked strong and alert. The instruction is built around agriculture, highly vocational. In the rear of the

Figure 82. A new school in the valley. The little plots at the back of the school have potatoes, oats, and clover. In the background may be seen the land before treatment and in the foreground how it looks afterward.

school were flower gardens and small rotation plots of wheat, clover, and potatoes, cared for by the children. At another school for small children I noted that they had free lunches which they served to themselves and each a little bed for the siesta. Everything was clean and orderly and the school was well equipped. Most of the children go to about our 6th or 8th grade and are not encouraged to go further.

The Marchese de Origo had also built, at his own expense, a very fine little hospital, with all necessary modern equipment, to serve as a model for the people in the region. His own house was large and comfortable. Associated with it were flower gardens, an olive oil press, an apiary, etc.

Environs of Naples

In the lowlands the land is most carefully cultivated. Much of it is irrigated by pumping with chain and bucket pumps operated by a donkey. Much of the bottomland, as well as some of the higher terraces and hillsides, have a "three-story" type of farming in small patches. There are olives or fruit and nut trees, such as apricots, cherries, and almonds; underneath are grapes; and on the surface of the ground beans, tomatoes, artichokes, corn, etc. Most of the soils are developed from very young volcanic deposits, especially ash, and are porous and not much subject to erosion. Orchards of fruits and nuts are carried up exceedingly steep slopes. Dams for erosion control, or rather

water control, and for control of volcanic debris were noted on the side of Mt. Vesuvius. This area has some of the finest agriculture that I have ever seen.

Figure 83. View of Naples from Mt. Vesuvius.

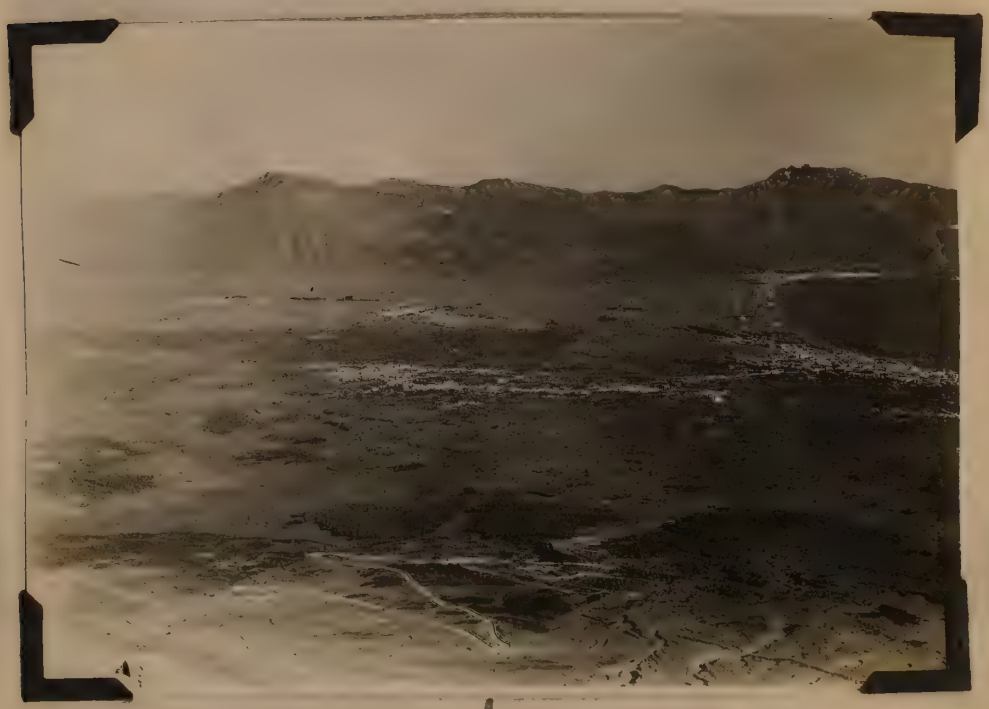


Figure 84. View of Naples from Mt. Vesuvius.

Figure 85. Ruins at Pompeii.

Figure 86. A street in old Pompeii. Note the marks left by chariot wheels.

Figure 87. Making souvenirs from hot lava.

Figure 88. Near the cinder cone in the crater of Mt. Vesuvius.

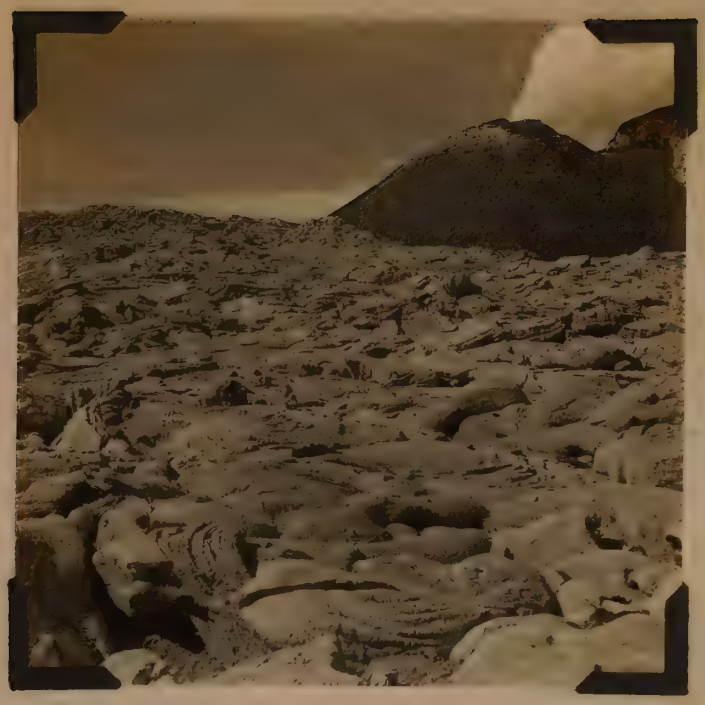


Figure 89. A view of the cinder cone in Mt. Vesuvius.

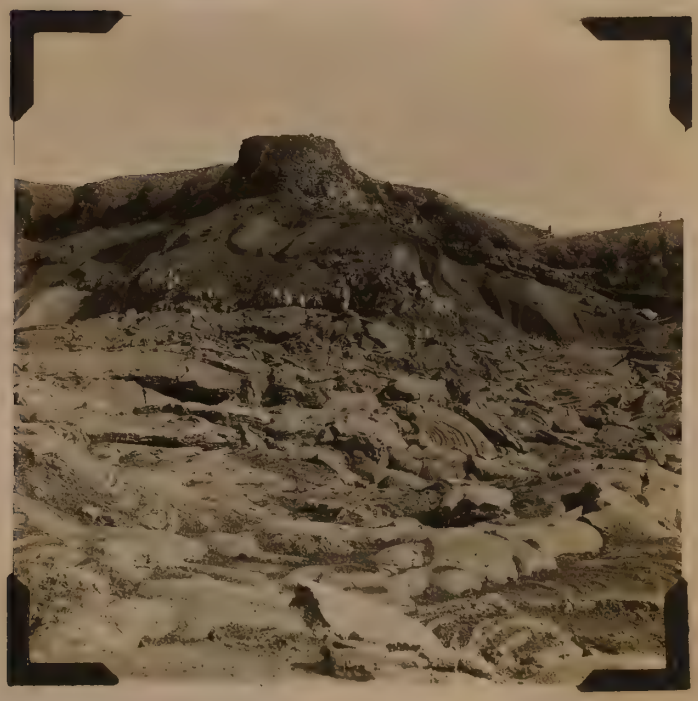


Figure 90. A view of the edge of the crater from a point near the cinder cone.

NÁPOLES

Nápoles, la ciudad de los grandes contrastes y de las sensaciones más inmediatas, además de representar por sí misma un gran atractivo para el turista, tiene alrededores tan hermosos y tan encantadores que quien los recorre pasa inadvertidamente de una sensación a otra, todas agradables y todas diversas.

De dondequeira que se parta, bien sea del norte o del sur, de oriente o de occidente, se llega rápida y cómodamente a Nápoles haciendo uso de los servicios marítimos, aéreos y ferroviarios.

El puerto de Nápoles está servido por numerosísimas líneas de navegación.

De Génova salen diariamente los aviones de las líneas Génova-Roma-Nápoles-Palermo y Génova-Nápoles-Siracusa-Trípoli.

Descendiendo del norte hacia el sur, después de haber atravesado buena parte de la península y de haber pasado por Roma Eterna, Nápoles os acoge con la perenne sonrisa de su cielo y con el encanto sin igual de su golfo.

NÁPOLES

DIREZIONE GENERALE PER IL TURISMO

El Vesubio

NÁPOLES *

Con razón Nápoles está reputada como una de las ciudades más hermosas del mundo. Y aun cuando el viajero que la visita por vez primera ya la conoce por las innumerables descripciones que de ella se han hecho en periódicos y libros, es tan extraordinamente bello el espectáculo que ofrece la ciudad y su golfo, que seguramente queda admirado ante tantas bellezas, de las que conservará un imborrable recuerdo.

La hermosa capital de la Campania recibio los dones que pródigamente derramó sobre ella la Naturaleza. Desde el cabo Miseno, desde las verdes pendientes de Posillipo, en una visión luminosa, en un triunfo de colores, es una continua sucesión de alturas, de jardines, de quintas de recreo, de bosques y campos, de playas y fuentes, hasta la lejana escollera de Sorrento, hasta las altas y blancas rocas de Capri.

NOTICIA HISTORICA

Los navegantes de la isla 'e Rodas, luego calcideses de Eubea, que 1000 años antes de Jesucristo habían fundado ya Cuma, edificaron una ciudad que, según la leyenda, tomó el nombre de una sirena llamada Partenope. Junto al primer núcleo — Palepoli — surgió con el tiempo una nueva ciudad, Nápoles, y la riqueza de la zona y el encanto de los lugares atrajeron a ella, en aumentativa corriente, a buen número de

Monumento a Carlos III

El Palacio Real

comerciantes fenicios y colonos atenienses, que acabaron por establecerse no sólo en Nápoles sino también en la Pulla, en Calabria y Sicilia, constituyendo lo que ellos mismos denominaron « la Grande Grecia ».

En la lucha de predominio que se entabló entre sanitas y romanos, Nápoles después de haber sido partidaria de los primeros, acabó por aliarse con Roma, a la que permaneció fiel también contra las tropas de Pirro y a pesar de las amenazas de Anibal. Favorita y protegida de Roma, Nápoles llegó a ser Municipio, mediante la « Lex Julia », y más tarde, en tiempos de Caracalla, colonia romana. Pero conquistada por Roma, Nápoles, centro del helenismo, conquistó a su vez a Roma, pues los romanos, pueblo de rudos guerreros todavía en aquella época, no sólo fueron atraídos por la belleza y el encanto de los lugares, sino también por la cultura y el arte griego y por la mayor libertad en que estaba inspirada la vida intelectual y social helénica.

Así Nápoles se convirtió en maestra de elegancia y de arte, y fué el lugar predilecto de los romanos. En efecto, allí surgieron las quintas de recreo de Cicerón, de Mario, de Pompeyo, de César,

Palacio Real - Escalera de honor (D Fontana)

de Domiciano, de Tiberio, y allí, en los famosos jardines de Lucullo, estuvo prisionero el último emperador, Rómulo Augustolo.

Después de haber sido defendida contra los godos de Alarico, y después de haber visto alternarse Erulos, Hunos y Longobardos, Nápoles fué por el Imperio constituído en Ducado, y así permaneció por espacio de tres siglos (761-1130). Con Roger I inicióse la dinastía normanda, a la que siguió la dominación sueva. Federico II fundó la Universidad, embelleció y amplió la ciudad y la dotó de instituciones civiles notables. Apagada la dinastía sueva con la muerte de Manfredi y de Corradino, comenzó el reinado de los Anjovinos, que duró más de siglo y medio. Fué un período turbulento de luchas, de delitos y vejaciones. Siguió para Nápoles el período de mayor es-

plendor con el advenimiento de los aragoneses, especialmente con Alfonso I, que hizo reflorecer los estudios y las letras e instituyó nuevos ordenamientos de justicia.

La dominación española, ejercitada por los Virreyes, que se inició en el siglo XVI, y el sucesivo reinado independiente de los Borbones, dieron a Nápoles ese sello de fausto y de magnificencia española que es propio de la ciudad y que todavía hoy conserva. Al breve reinado de Joaquín Murat (1806-1815) siguió nuevamente el gobierno borbónico, hasta el año 1860, cuando José Garibaldi, conquistadas la Sicilia y la Calabria y ganada la batalla del Volturno, entró en Nápoles, que vino así a formar parte del Reino de Italia.

« Dulcis Neapolis » la llamó Virgilio, « otiosa Neapolis » la llamó Horacio; y en verdad, las bellezas naturales del golfo y de los alrededores, la animación característica de las calles, en las que se

San Francisco de Paula

Plaza del Plebiscito (a vista de aeroplano)

desenvuelve casi enteramente la vida napolitana, atraen tanto al forastero, que no siente el deseo de visitar las iglesias y los museos. Pero los monumentos del pasado y los tesoros de arte son tantos y tan importantes que el viajero no puede dejar de visitarlos.

El período greco-romano revive para el visitante en Pompeya, en Ercolano, en Pozzuoli, en Cuma, en Paestum. La mayor parte de las obras de arte descubiertas en estas localidades, merced a constantes y meticulosos trabajos de excavación, han sido reunidas en el interesantísimo Museo Nacional.

Del tiempo de los normandos, anjovinos y aragoneses, se conservan en Nápoles monumentos imponentes: « Castel dell'Ovo », « Castel Nuovo », « Castel Capuano » y algunas iglesias góticas, como *San Lorenzo,* la Catedral y *San Domenico.* Pero lo que más caracteriza a Nápoles es la magnificencia barroca de los palacios y de las iglesias, en inmediato contacto con las características aglomeraciones de los

barrios populares, que conserva todavía como un recuerdo de la dominación española; y estas formas exteriores reflejan exactamente las condiciones sociales en que vivió Nápoles por espacio de varios siglos. El Gobierno italiano renovó una parte de la ciudad vieja, edificó nuevos barrios en el extrarradio, enlazó Nápoles con las provincias limítrofes, creó nuevas industrias, transformando así la vieja ciudad de los ocios y de la miseria en un centro de activa vida moderna. Hoy, el Gobierno fascista, continúa con laborioso tesón y gran celeridad la grandiosa obra de saneamiento y de renovación.

Nápoles no es solamente el centro comercial, cultural y artístico del sur de Italia, sino también una de las más importantes ciudades del Mediterráneo. Líneas de navegación la enlazan con los puertos italianos, con todos los del Mediterráneo, con las Américas, con Egipto, India y Australia. Líneas aéreas establecen rápidas comunicaciones con Roma, Génova, Palermo, Túnez, Siracusa y Trípoli. Las comunicaciones ferroviarias son las de una Metrópoli; durante el invierno y la primavera trenes directos de lujo enlazan Nápoles con Berlín, París y Sicilia.

Teatro San Carlos
(visto desde la Galería)

Para dar una orientación general a quien llega por primera vez a Nápoles, dividiremos la ciudad en dos partes La parte panorámica, que comienza a Sudoeste de la Plaza del Municipio, comprende el Palacio Real, *Castel Nuovo* y *Castel dell'Ovo,* el espolón de Pizzofalcone, prosiguiendo, a lo

Vía Caracciolo - El Paseo

largo del mar, por la *Vía Caracciolo,* el barrio *Amedeo, Mergellina* y *Posillipo,* el Vomero con *Castel S. Elmo* y la Cartuja de San Martino.

La parte interna de la ciudad puede ser también indicada como la más antigua, toda vez que su fundación data de los comienzos del siglo V antes de Jesucristo; en efecto, entre la Catedral y *Santa Chiara,* las calles actuales siguen todavía el trazado de las de hace 2400 años, y así como en Roma se han edificado varias iglesias en el emplazamiento de los templos antiguos, lo mismo se han edificado la Catedral misma, *Santa Restituta, San Giovanni Maggiore.*

Para facilitar la visita de Nápoles indicaremos algunos itinerarios, tomando como punto de partida la Piazza Trieste e Trento, que es el centro de la vida napolitana.

1. - Desde la Piazza Trieste e Trento a la Via Caracciolo y Mergellina.

Partiendo de esta plaza (a la izquierda se halla una salida lateral de la *Galería Umberto I,* frente al Teatro San Carlos), torciendo a la derecha se llega a la *Piazza del Plebiscito,* formada por el Palacio

Villa Nacional - La Fuente

Real y por la columnata y la iglesia de *San Francisco de Paula.* El *Palacio Real* fué construído en el año 1600 por Domenico Fontana (el famoso arquitecto del papa Sixto V) y restaurado en 1841 por Gaetano Genovese. El pórticó fué adaptado por Vanvitelli, y en los nichos de la fachada han sido colocadas las estatuas de los fundadores de las Monarquías que han reinado en Nápoles: Roger el Normando, Federico II de Suevia, Carlos I de Anjou, Alfonso I de Aragón, Carlos V, Carlos III de

Detalle de la Fuente

Museo Nacional - « Danae » (Ticiano)

Borbón, Joaquín Murat y Victor Manuel II. La fachada y el amplio patio cuadrado son todavía los de Fontana, pero en el siglo XIX se añadió el ala que arranca del Teatro San Carlos, así como el conjunto de construcciones, terrazas y jardines que se prolongan hacia el puerto, al Sur, y al Norte hacia la Piazza Trieste e Trento. La visita es libre para el público el jueves y el domingo, y por lo tanto, bastará dirigirse al personal del Palàcio.

Las dos alas de columnata que arrancan del pórtico de *San Francisco de Paula* las mandó construir Joaquín Murat. El interior de la iglesia forma una rotonda que imita el Panteón de Roma; la cúpula está sostenida por 34 columnas de orden corintio.

Desde la *Plaza del Plebiscito* se desciende hacia el mar siguiendo la *Vía Cesario Console*, desde donde se puede admirar el bellísimo panorama del puerto, de la costa y del Vesubio, hasta los confines de Sorrento. A la izquierda de la *Vía Cesario Console* se extienden los nuevos

jardines y la nueva carretera que desde el Palacio Municipal corre paralela al Molo Beverello, bordeando *Castel Nuovo*. La « Galería de la Victoria », que pasa por debajo de la altura de Pizzofalcone, prolonga esta arteria, enlazándola con la carretera del litoral hacia la *Vía Caracciolo* y la *Riviera di Chiaia*.

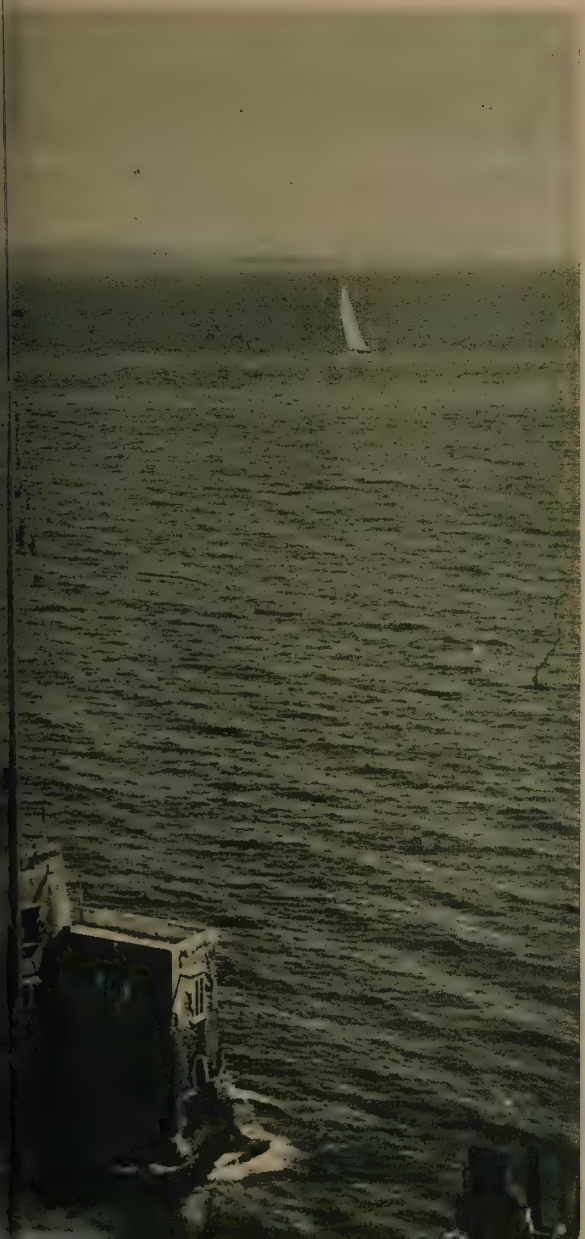
El elegante barrio de *Santa Lucia* alínea, a lo largo del mar y con vistas al maravilloso golfo, sus lujosos hoteles y bellas construcciones. Desde la *Vía Partenope* un puente conduce a *Castel dell'Ovo*, así llamado acaso por la forma de la planta del Castillo. Pero este nombre singular y sugestivo está más bien ligado a una leyenda sobre Virgilio. El Poeta, que en la Edad Media era considerado como un « mago », habría colocado un huevo en una jaula, y de este huevo, según la leyenda, habría dependido la suerte del Castillo. El vástago sobre el cual se alza la maciza construcción del Castel dell'Ovo formaba parte de los jardines de Lucullo. Pero Roger el Normando cons-

Plaza Vittorio

truyó allí, para defender la ciudad, el primer castillo, que fué completado por Federico II. En él habitaron Federico y su hijo Manfredi, y en él estuvieron prisioneros Corradino de Suevia y Beatriz, hija de Manfredi. Giotto decoró con frescos la Capilla; pero en el año 1503, durante la lucha entre españoles y franceses, todo el Castillo fué saltado en el aire. Para visitarlo hay que dirigirse a la Comandancia militar, que tiene su estancia en el Castillo.

Alrededor del pequeño puerto de *Santa Lucia* se hallan instalados los elegantes clubs náuticos con su típica y activa vida deportiva y marinera, a la que le han dado gran impulso los numerosos balandros, bateles y yachts que acuden allí de todas partes del mundo, y que atracan en el pequeño Molo (muelle), por detrás del « Borgo Marinaro ».

El puertecito de *Santa Lucía* y el *Borgo Marinaro* constituyen, sobre todo, el más característico reclamo para los forasteros, pues allí, en pleno muelle, están los restaurantes famosos, con sus comedores sobre el mar, sus terrazas cuajadas de luz y una rara alegría en la hospitalidad universal.



Continuando a lo largo del mar se llega a la *Piazza della Vittoria* y a la *Villa Nazionale,* donde está la estación zoológica con el famoso *Acuario.* La anchurosa *Vía Caracciolo,* que corre paralela al mar, llega hasta *Mergellina,* de donde arranca la Vía de Posillipo, que recorre todo el promontorio. El tranvía conduce hasta el *Cabo Posillipo,* desde donde se goza la hermosa vista del golfo, de la cercana isla de Nisida y del Cabo Miseno.

Desde Posillipo

Si desde Mergellina se cruza la *Plaza Sannazzaro* y se sigue la corta *Salita di Piedigrotta,* se llega a *Santa Maria Nuova di Piedigrotta,* uno de los templos más concurridos y más populares de Nápoles, muy conocido por la tradicional y grandiosa fiesta de *Piedigrotta,* que ce celebra todos los años el 7 y el 8 de septiembre y durante

la cual se cantan las nuevas canciones compuestas para tal ocasión.

Recorriendo la *Riviera di Chiaia,* la *Piazza dei Martiri* y la *Via Chiaia,* se regresa al punto de partida.

Maschio Angioino - Detalle del Pórtico

Maschio Angioino

2. - Piazza Trieste e Trento - Castel Nuovo - Rettifilo - Porta Capuana - San Jenaro - S. Domenico Maggiore - Santa Chiara.

Desde la plaza « Trieste e Trento », dejando a la izquierda la *Galería Umberto I* (construída en 1887) y a la derecha el « Teatro San Carlos », se entra en la *Vía de Victorio Emmanuele.* El *Teatro San Carlos,* mandado construir por Carlos III de Borbón, fué inaugurado en 1737. El arquitecto Fuga introdujo en 1777 algunas modificaciones y creó un escenario que es único en el mundo por la resonancia de las voces. El atrio y la actual fachada son de la mitad del siglo pasado. Continuando a lo largo de los jardines reales se llega a *Castel Nuovo,* mandado construir en 1282 por Carlos I de Anjou, conforme al plan de Giovanni Pisano. La construcción, ordenada pos-

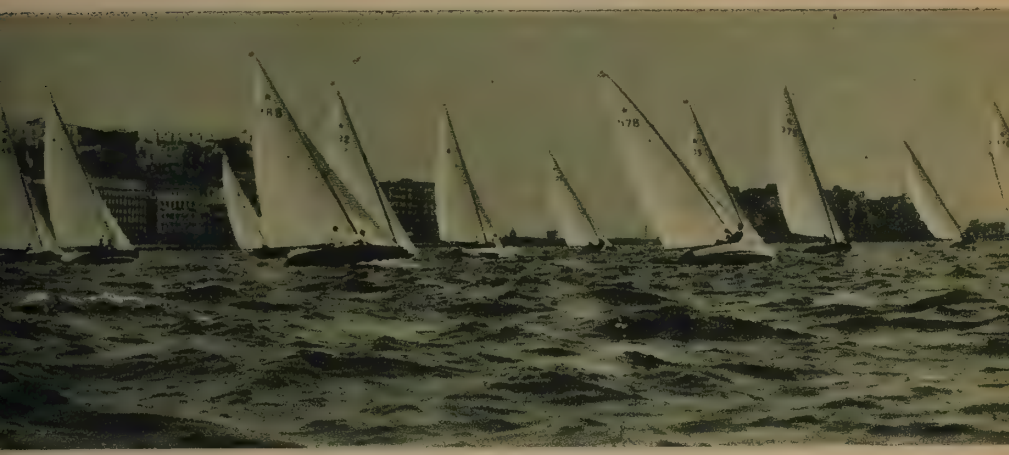
teriormente por Alfonso de Aragón, dejó muy poco de la primitiva. El Arco de Triunfo de Alfonso de Aragón, aprisionado por dos altas torres cilíndricas, es un espléndido ejemplo, una obra apreciable del Renacimiento, atribuída a Luciano Laurana. Nuevas construcciones de carácter utilitario fueron llevadas a cabo bajo los Borbones, pero recientemente el Castillo ha sido librado de ellas, de modo que hoy aparece en toda su imponencia, evocando fielmente, en el contraste entre su huraña magnitud y la riente ciudad que lo circunda, aquella fuerza

Castel dell'Ovo

y violencia que emplearon los anjovinos para mantener su dominación en Nápoles. Es notable en el interior la iglesia de *Santa Bárbara* (fachada y puerta de Giuliano de Maiano, frescos de Lucas Jordán), la gran sala de *los Baroni* y la bellísima escalera de caracol.

Desde la *Plaza del Municipio* el paseo a la orilla del mar corre paralelo al puerto mercantil; torciendo a la izquierda por la *Vía Agostino De Pretis,* se llega a la *Plaza Giovanni Bovio,* donde está la Bolsa. Desde aquí se sigue el *Corso Umberto I* (« Rettifilo »). A la

Regatas en el Golfo de Nápoles



izquierda se alza el imponente edificio de la Universidad. El *Rettifilo* termina en la Estación Central, en la *Plaza Garibaldi,* desde donde la *Vía A. Poerio* conduce al populoso barrio de *Porta Capuana.*

Aquí está la *Porta Capuana,* bella obra del Renacimiento, ejecutada por artistas napolitanos, con arreglo a los planos de Giuliano de Maiano. Está flanqueada por dos majestuosas torres llamadas « Onore » y « Virtu ». Cerca de la Porta Capuana se yergue el *Castel Capuano,* con sus prisiones lóbregas y su historia espeluznante. Comenzado por Guillermo I Normando (1150) y terminado por Federico II, hoy es la sede del Tribunal. Su interior merece ser visitado, pues es interesante y característica la vida que en él se desenvuelve.

Desde el *Castel Capuano* arranca la *Vía dei Tribunali,* de abigarrada animación, y por ella se va a la *Vía del Duomo.* Siguiendo esta calle a la derecha se llega a la *Catedral de San Jenaro,* en que el estilo

gótico adquiere aladas potencialidades, cobijando admirables frescos de Lucas Jordán y Solimena, con el altar de plata de San Jenaro y numerosas pinturas de Domeniquino. Y aquí también se conservan las famosísimas ampollas que contienen la sangre coagulada del santo, con la milagrosa circunstancia de que durante dos días al año — en mayo y en septiembre — esta sangre se licúa y adquiere un asombroso color de cosa viva, dando lugar a manifestaciones de júbilo y entusiasmo religioso por parte de todo el pueblo napolitano. La Cripta contiene admirables decoraciones del Renacimiento y bellas puertas de bronce. La catedral de San Jenaro, cuyo interior es de tres naves, fué restaurada durante el Renacimiento.

Catedral - Capilla de San Jenaro

Al salir de la catedral se baja por la *Vía del Duomo* hasta la *Vía San Biagio* (a la derecha), que con varios nombres conduce en línea recta hasta la *Vía Roma*. En la *Vía San Biagio,* una de las calles más antiguas y características de Nápoles, pueden admirarse algunas entre las más bellas construcciones de la ciudad: *San Domenico Maggiore,* de Masuccio, una construcción gótica con torre barroca y los sepulcros monumentales de los Reyes aragoneses; *Santa Chiara* con el Convento de las Clarisas, mandado construir por el Rey Ro-

berto y por la Reina Sancha de Aragón. La antigua iglesia gótica ha sido transformada casi enteramente con ornamentaciones barrocas añadidas en tiempos de la dominación española. Guarda numerosos monumentos, entre ellos el sepulcro del rey Roberto, obra maestra del arte sienés, debida a Tino

de Camaino. El *Convento de Santa Chiara* era llamado también « convento de las enterradas vivas », porque las clarisas que entraban en él no salían ni aun después de muertas. Guarda el claustro un sugestivo sepulcrito, una capilla que en lugar del pavimento tiene tierra removida, y que las monjas la llamaban « el jardín ». Es notable el coro de las Cla-

San Jenaro

risas, separado de la iglesia por una gran pared en la que hay una pequeña abertura con una reja murada, por donde las monjas podían oir las funciones sagradas. Los frescos de Giotto que adornaban las altas pilastras y las paredes del coro, han desaparecido, gastados por el tiempo.

Es bellísimo el claustro, adornado con azulejos de la Real Fábrica de Capodimonte. Cerca de *Santa Clara* está la iglesia de *Gesù Nuovo*, de las postrimerías del Renacimiento, amplia y suntuosa por su riqueza en mármoles.

3. - Desde la Piazza Trieste e Trento al Museo Nacional.

La *Vía Roma* (antes *Vía Toledo*), la principal arteria de la ciudad, fué abierta en 1540 por el Virrey Don Pedro de Toledo, de quien tomó el nombre. En esta calle tiene su floración y su apoteosis la elegancia y la frivolidad de la hermosa población tirrena. Stendhal llamó a esta calle « la más populosa y alegre del Universo ». Desde la *Plaza Trieste e Trento* se cruza la *Galería Umberto I* y se desemboca en la *Vía Santa Brigida*, donde puede visitarse la iglesia, erigida en la primera mitad del siglo XVII. Son admirables los frescos de Lucas Jordán que decoran el interior de la doble cúpula, pues ésta, muy rebajada, presenta una superficie de poca profundidad que los contemporáneos de Lucas Jordán llamaron « escudilla ». El arte sumo del pintor, y su maestría en trazar escorzos y sombras, engañan la vista y hacen aparecer la cúpula como verdadera y no simulada.

Santa Chiara - Refectorio - Cristo y Santos (Giotto)

Siguiendo la Vía Roma, y pasado el *Largo della Carità,* se tuerce a la derecha por la Vía Tommaso Caravita que conduce a la iglesia de *Monte Oliveto,* rica en admirables obras del Renacimiento. Detrás de la *Plaza de Dante* se ve a la derecha el Instituto de Bellas Artes, que alberga la Galería de Arte Moderno. Continuando por la *Vía Pessina* se llega al *Museo Nacional.* En 1737 el rey Carlos de Borbón decidió fundar un museo en Capodimonte para reunir en él las colecciones que había heredado de su madre, Isabel Farnese. Pero como iba aumentando continuamente el material recogido en las excavaciones de Ercolano, Stabia y Pompeya, se acordó colocar este material y la

colección Farnese en el edificio transformado en Universidad en el año 1615 por el arquitecto Giulio Cesare Fontana.

La rica y curiosa colección de vasos pintados procede de las necrópolis griegas de la Pulla; la colección de antigüedades egipcias (colección Borgia) fué adquirida en 1817. La escultura griega está representada por obras de numerosos artistas, de la época arcaica (Atena, Promachos, Armodio, Aristogiton, Artemides), de la época clásica (Pallade Atena, Hera Farnese, Flora Farnese), y de la época helenística (Hércules Farnese, Afrodita de Sinuessa, Venus Callipigia, Psiquis). Es muy interesante la galería de los bustos griegos y romanos, la galería de los Emperadores, las salas de las estatuas de bronce, la sala de los ornamentos y los mosaicos griegos. La Pinacoteca contiene pinturas de la escuela napolitana y de otras escuelas italianas y extranjeras.

Del Museo Nacional y de *Plaza Cavour* arranca una anchísima calle que, atravesando barrios modernos, llega hasta la *Plaza Car-*

Museo Nacional - Sala Tercerá (de las estatuas de bronce)

los III. Pero si se sigue la *Via S. Teresa degli Scalzi* (al lado del Museo Nacional) la calle conduce hacia el *Palacio Real de Capodimonte.*

4. - El Vomero.

Riente colina, al Noroeste de Nápoles, desde la que se contempla, en admirable vista de conjunto, el panorama de la ciudad y del golfo. Tres funiculares, conducen al Vomero: desde *Chiaia*, desde la *Vía*

Narciso

Roma y desde *Montesanto*. En el Vomero, barrio novísimo, poblado de casas modernas y quintas de recreo, merecen visitarse el *Castillo de San Telmo,* alcazaba de los Anjovinos, la *Cartuja* y el *Museo de San Martino,* dedicado a la historia y al arte de Nápoles. El Claustro, bellísimo, es obra da Fansaga, que en el siglo XVII hizo también importantes restauraciones en la iglesia, ricamente adornada con mármoles.

Desde el *Belvedere,* soberbio mirador del Castillo de San Telmo, el panorama adquiere increibles y prodigiosas magnitudes.

Desde el Vomero, por la *Vía Aniello Falcone* y *Vía Tasso,* se puede ir a *Posillipo.*

5. - Atractivos y diversiones.

Nápoles ofrece a la curiosidad del forastero no solamente los atractivos de sus bellezas naturales y arqueológicas, sino también los más encantadores motivos de diversión. El forastero encuentra en Nápoles una vida bien organizada que no tiene nada que envidiar a las más brillantes y modernas metrópolis. Los precios de estancia, y todo el ambiente de Nápoles, resulta grato y animado sin gastos excesivos para poder realizar esa vida frívola que en otros lugares europeos solo está reservada a los favorecidos por la fortuna. Nápoles ofrece una gran variedad de espectáculos y conciertos, *dancings* y lugares de reunión, donde se da cita el mundo elegante. Se organizan, además, fiestas muy brillantes que hacen agradable la estancia en todas las estaciones del año.

Si la temporada de ópera y el brillante programa de vida deportiva y mundana hacen agradable la estancia en Nápoles en la época invernal, no lo es menos en los meses estivales en Capri, Sorrento, Positano, Ischia, que disfrutan de un clima admirable. A Ischia acuden muchos forasteros, atraídos por la benignidad de su clima. Por tanto, desde junio hasta octubre pueden tomarse baños de agua de mar sin alejarse de la ciudad, y disfrutar al mismo tiempo de sus atractivos, que son muy numerosos en los meses estivales.

Playas y establecimientos balnearios a diez minutos del centro de la ciudad, hoteles frente al mar y pensiones de todas las categorías a lo largo de la Vía Caracciolo y de la carretera que corre paralela al mar, hacen práctica y aconsejable la estancia en Nápoles en los

meses estivales. En Nápoles no faltan los lugares de esparcimiento. Bailes, fiestas nocturnas, nada puede echar de menos quien acude a Santa Lucia y a Posillipo.

Teatros de verano, *dancings* sobre el mar y en la colina con el maravilloso escenario del arco del golfo, fiestas variadas, regatas a

Museo Nacional - Crucifijo (Masaccio)

Cartuja de San Martino

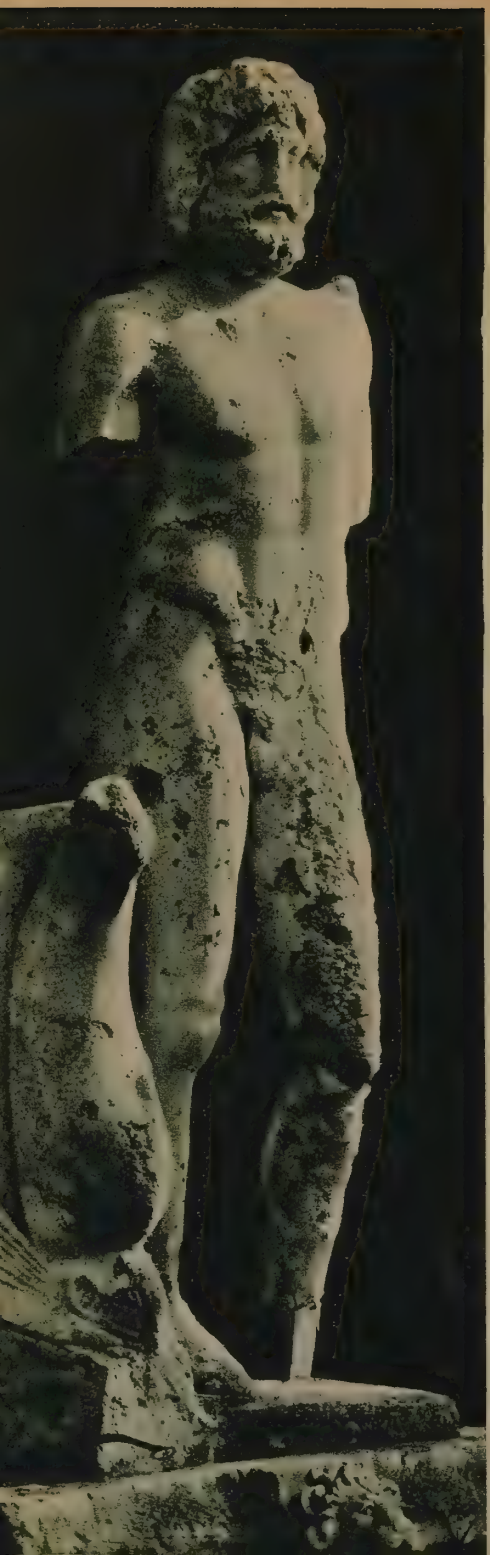
la vela, fiestas náuticas y motonáuticas, carreras de automóviles y de caballos, batallas de flores, bellísimas fiestas religiosas y ceremonias históricas, y los cortejos de Piedigrotta enriquecen el programa de las fiestas y manifestaciones que organiza Nápoles desde principio del verano hasta el final del otoño para sus visitantes.

A lo largo del paseo de *Vía Partenope* y *Vía Caracciolo* se alinean los salones de the, los lugares de reunión y las salas de conciertos que se ven muy concurridas siempre y que son muy frecuentadas por los turistas.

Son salones admirables, amplios, en que la multitud vive horas de felicidad, disfrutando al mismo tiempo el más hermoso escenario que la Naturaleza pueda ofrecer.

Los hoteles de la Riviera han instituido « boites » y « dancings » característicos en los que se baila todas las noches durante la estación invernal y en los que la música jamás se interrumpe. En los meses estivales, estos « clubs », abiertos especialmente al público cosmopolita, son substituídos por los dancings en las terrazas de los hoteles de Santa Lucía y en los puntos panorámicos de la ciudad: en el Vomero, en Posillipo Alto, en el Parque llamado « delle Rimembranze », en el Pinar a lo largo de la autopista, donde los forasteros pueden pasar veladas deciosas en los meses estivales.

Palacio Real de Capodimonte (a vista de aeroplano)



La ciudad de Nápoles disfruta de un clima privilegiado. En invierno la temperatura es muy moderada, y en verano, merced a su espléndida situación en el golfo, los días son generalmente frescos, por lo que goza abundancia de ventilación. Tales condiciones climatológicas hacen de Nápoles un excepcional punto de residencia en todo tiempo, realzado por un cielo, como pocos, luminoso y puro. La media de las temperaturas extremas en invierno y en verano son:

Invierno

media de las mínimas: 7,7; media de las máximas: 14,4.

Verano

media de las mínimas: 20,1; media de las máximas: 29,5.

En la playa de Posillipo, en las islas y en la sugestiva Positano, y en la costa de Amalfi, a menos de una hora de Nápoles, numerosos extranjeros y napolitanos continúan las curas elioterápicas y marinas durante todos los meses del año.

Pozzuoli - Anfiteatro - Estatua de Poseidón

PASEOS Y EXCURSIONES

Una espesa red de ferrocarriles, tranvías y líneas de navegación costera enlaza Nápoles con las localidades del Golfo y con las islas.

1. - *Capodimonte* (tranvía). — Palacio Real de estilo neoclásico, mandado construir por Carlos III. Además de los departamentos reales contiene una galería de cuadros de la escuela napolitana y de la romana del siglo XIX, y una interesantísima colección de porcelanas de la Fábrica de Capodimonte, fundada también por Carlos III. El Palacio está rodeado de un amplio parque. Desde la *Vía San Gennaro dei Poveri* se llega al *Hospicio*, donde pueden visitarse las *Catacumbas de San Jenaro*.

2. - *Corso Vittorio Emanuele*. — Es una calle que se prolonga sobre las alturas por 4 kilómetros, ofreciendo amplias y maravillosas vistas de la ciudad y del golfo.

Lago de Averno - Baia y Cabo Miseno

Pompeya - Casa de los Amorcillos dorados

3. *Posillipo* (tranvía). — Como ya hemos dicho en el itinerario N. 1, desde Mergellina se sube por la *Vía Posillipo*. A la izquerda está el sugestivo *Palacio Donn' Anna*. Más allá, a la derecha, el Mausoleo erigido a la memoria de los soldados napolitanos muertos en la Gran Guerra. Antes de llegar al Cabo Posillipo, tómase a la izquierda por una

Pompeya - El Fauno

calle que desciende hasta *Marechiaro*. Subiendo, a la derecha, se entra en el vasto rectilíneo que conduce al maravilloso Parque « della Rimembranza », desde cuya altura se goza, en admi-

Ercolano - Casa del Mosaico - « El Mosaico »

rable vista de conjunto, todo el panorama del golfo de Nápoles desde las dos vertientes: la de los *Campos Flegrei* y la de la *rada Caracciolo* hasta *Castel dell'Ovo* y el *Vesubio.*

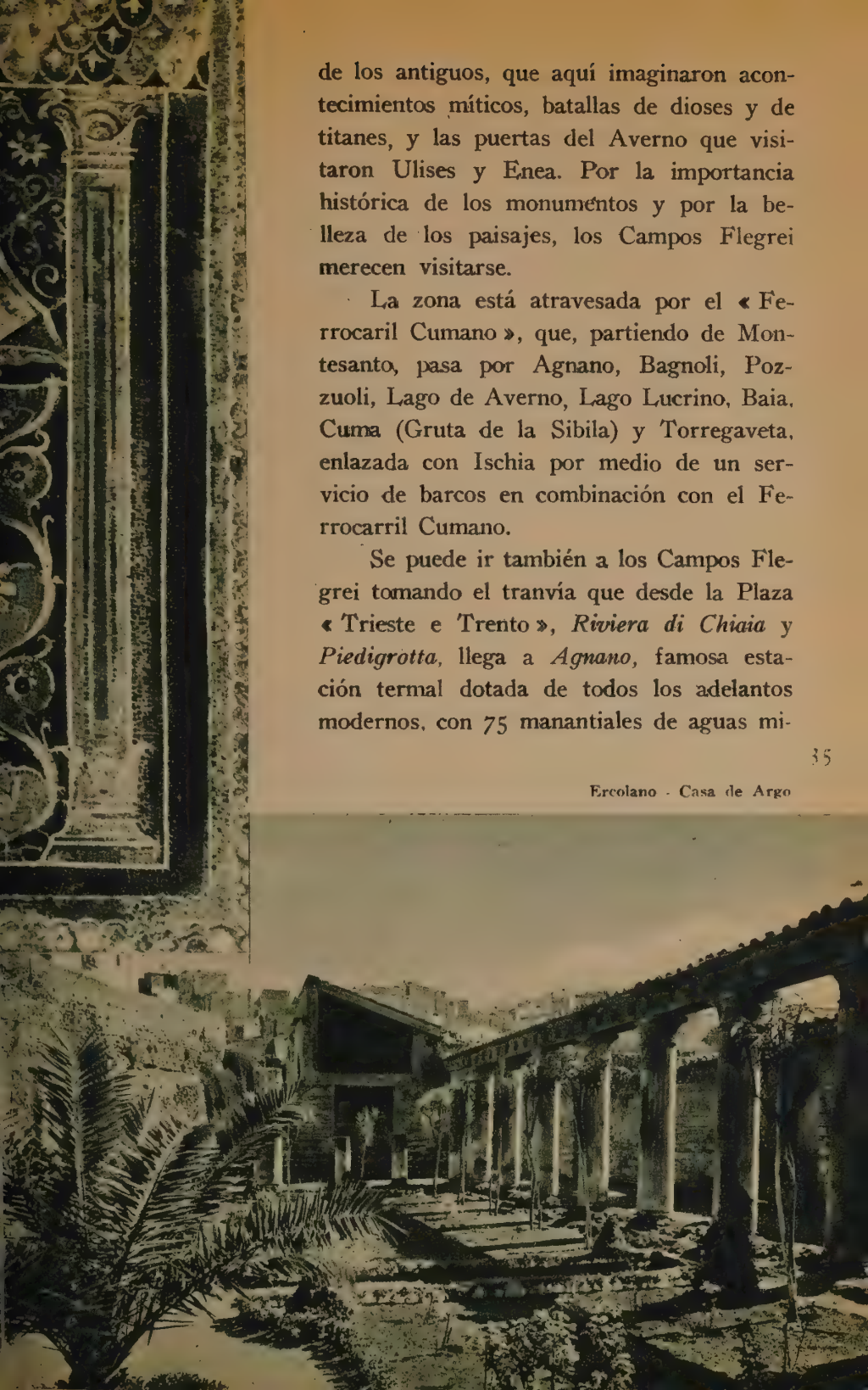
4. - *Campos Flegrei.* — El nombre es debido a la naturaleza volcánica de la zona (en griego significa « tierras ardientes »), que, revuelta por las erupciones, con sus cráteres petrificados, sus manantiales de agua caliente, las solfataras, las rocas salvajes, arrebató la fantasía

de los antiguos, que aquí imaginaron acontecimientos míticos, batallas de dioses y de titanes, y las puertas del Averno que visitaron Ulises y Enea. Por la importancia histórica de los monumentos y por la belleza de los paisajes, los Campos Flegrei merecen visitarse.

La zona está atravesada por el « Ferrocaril Cumano », que, partiendo de Montesanto, pasa por Agnano, Bagnoli, Pozzuoli, Lago de Averno, Lago Lucrino, Baia, Cuma (Gruta de la Sibila) y Torregaveta, enlazada con Ischia por medio de un servicio de barcos en combinación con el Ferrocarril Cumano.

Se puede ir también a los Campos Flegrei tomando el tranvía que desde la Plaza « Trieste e Trento », *Riviera di Chiaia* y *Piedigrotta*, llega a *Agnano*, famosa estación termal dotada de todos los adelantos modernos, con 75 manantiales de aguas mi-

Ercolano - Casa de Argo



nerales y termales de composición y temperaturas diferentes, y de un nuevo Hipódromo, imponente y bellísimo. También en *Bagnoli* existen manantiales termales.

Desde aquí se va a *Pozzuoli* (restos del Puerto romano, Anfiteatro, Templo de Serápide). Un espectáculo muy interesante ofrece la *Solfatara,* cráter apagado de un viejo volcán, del que salen chorros de vapor y de anidrida sulfurosa.

Baia, lugar de delicias de los romanos, es muy pintoresca e interesante, por las ruinas de templos y termas, y por su castillo español. Desde aquí, por *Torregaveta* se va al *Lago Fusaro* (villa real del Vanvitelli) y a las excavaciones de *Cuma,* a las que se puede ir también desde *Pozzuoli,* pasando por el *Arco Felice.*

5. - *Prócida* (desde Nápoles, Molo Beverello, servicio de barcos, o por el Ferrocarril Cumano hasta Torregaveta). — Isla encantadora con costas y playas pintorescas.

Caserta - Palacio Real - Parque - Tercera Cascada

Sorrento

6. - *Ischia* (desde Nápoles, las mismas comunicaciones que para Procida). Una de las más bellas islas del Tirreno, con vistas panorámicas de singular belleza.

Casamicciola, que, con *Porto d'Ischia,* es uno de los centros principales de la isla, es estación termal importantísima, para baños, aplicaciones de fangos, inhalaciones. También en *Porto d'Ischia* hay baños termales y una riente playa con un bosque de pinos. La arena de la playa de Ischia está dotada de gran poder radioactivo, de modo que todas las curas, marinas y termales, dada la naturaleza volcánica de la isla, tienen una eficacia prodigiosa.

7. - *Capri* (servicio de barcos desde el Molo Beverello). — Esta isla, célebre por sus paisajes de incomparable belleza, es una de las más importantes estaciones climáticas del Mediterráneo. La alta temperatura del agua permite tomar baños de agua de mar también en primavera y en otoño avanzado.

Uno de los mayores atractivos de Capri es la Gruta Azul, que goza de gran fama.

Capri - Los Farallones

8. - *Pompeya* (Ferrocarril del Estado, Ferrocarril Circunvesubiano, Autopista). — Eesta bella, rica y populosa ciudad romana, fué sepultada por las cenizas del Vesubio durante la erupción del año 79 después de Jesucristo.

Merced a constantes y meticulosos trabajos de excavación inteligentísima se ha sacado a luz la entera ciudad.

Señalamos a los turistas los opúscolos del ENIT que tratan de Pompeya y Ercolano.

9. - *Ercolano* (Ferrocarril Nápoles-Salerno hasta Portici, continuando en coche o a pie. Es más práctico tomar el tranvía Nápoles-Torre del Greco hasta Resina. Ferrocarril Nápoles-Pompeya-Sarno, hasta Pugliano. Carretera provincial Nápoles-Salerno hasta Resina).

Las excavaciones, que son interesantísimas, fueron iniciadas en 1927 y se llevan adelante con el mismo sistema empleado en las excavaciones de la *Vía de la Abundancia* en Pompeya.

10. - *El Vesubio.* — La visita a Nápoles sería incompleta si no se realizara la excursión al Vesubio. El panorama es de una amplitud y de una belleza insuperable. La zona de los cráteres es de gran interés. La ascensión puede hacerse del modo más cómodo y más rápido (5 horas) utilizando el ferrocarril y el funicular.

Para visitar el cráter es preciso que el turista vaya acompañado de un guía oficial.

11. - *La costa de Nápoles.* — Pueden realizarse bellísimas excursiones por el Golfo de Nápoles y por la península de Sorrento. El ferrocarril conduce a *Portici, Torre del Greco* (industria del coral), *Torre Annunziata* (industria de las pastas alimenticias), *Castellam-*

Capri - Panorama

Ischia - El Castillo de Aragón y Pinar

mare di Stabia, graciosa ciudad muy conocida por su antiguo astillero naval. En Castellammare está el delicioso Parque setecentesco de *Quisisana.* Los manantiales minerales y termales le han dado a la ciudad el apelativo de « reina de las aguas ».

Desde Castellammare el tranvía conduce a *Vico Equense, Meta* y *Sorrento,* estación climática de fama mundial, por su situación encantadora y por la belleza de su costa. (Son notables la Catedral, la Loggia Dominova, S. Antonio, etc). *Massalubrense* y *Sant'Agata sui due Golfi* merecen ser visitadas, pues ofrecen a la curiosidad del viajero espléndidas vistas panorámicas.

12. - *La Costa de Salerno y Amalfi.* — Salerno dista de Nápoles 54 kilómetros. Se va fácilmente pasando por *Cava dei Tirreni,* graciosa ciudad con buenos hoteles. En ella puede visitarse la *Abadía de la Trinidad,* que ofrece notable interés histórico y artístico.

Vietri sul Mare, de donde arranca la carretera que va a *Amalfi,* una de las más bellas y sugestivas del mundo. Cruzando valles um-

brosos, la carretera sube hasta la alta costa rocosa, a pico sobre el mar, descubriendo a cada instante vistas panorámicas de insuperable belleza y pueblecitos pintorescos, como *Maiori, Minori* (antiguo arsenal de Amalfi), *Amalfi, Ravello, Positano. Amalfi,* edificada en el siglo IV, se hizo potente república medioeval, conocida hasta en Arabia y en India. Posee tesoros de arte, entre ellos la Catedral Normanda, el Convento del Paraíso y el pequeño museo, en el que se conservan las famosas Tablas de Amalfi.

Más en lo alto está Ravello, en situación espléndida. Tiene de notable la Catedral, con su soberbio púlpito del Evangelio, la iglesia de San Giovanni del Toro, rica en mosaicos y frescos, el Palacio Rufolo (siglo XI) y la Villa Cimbrone.

Salerno, hermosa ciudad de 70.000 habitantes, está también en situación espléndida y posee obras de arte de gran mérito, entre ellas la bellísima Catedral románica y muchas antigüedades reunidas en el Museo Nuevo.

De Salerno arranca una carretera asfaltada que va a *Pesto*

Ischia - Puerto Natural

Amalfi - La Catedral

(43 kilómetros), antiguamente llamada Posidonia, célebre por sus magníficos templos griegos. Recientemente fueron restauradas las murallas de la ciudad con sus torres y escaleras, y la puerta que da al mar.

Además, se ha sacado a luz y ha sido restaurado el Anfiteatro griego y los restos del Templo itálico de la Paz. Actualmente se realizan trabajos de excavación para descubrir el Foro.

Señalamos el opúsculo del ENIT que trata de Pesto.

A poca distancia de la costa está *Velia*, con restos de tres templos, y *Capo Palinuro*, donde pueden visitarse grutas interesantes; son bellísimas las estalactitas de la gruta de *Pertosa*.

13. - *Caserta* (ferrocarril desde Nápoles). — El *Palacio Real*, amplio y suntuoso, obra de Vanvitelli, es uno de los más espléndidos de Europa.

Su majestuoso Parque es de estilo del de Versalles, y ofrece toda una serie de elegantes visiones seiscentescas en la sucesión de sus rotondas, rodeadas de lagos, de cascadas, de fuentes monumentales.

La última cascada del Parque recoge las aguas de un entero acueducto, el acueducto Carolino.

Sobre la colina que está al norte del Palacio Real se halla *Caserta vecchia* con su catedral de estilo lombardo-sícul-normando, del siglo XII.

Existen en el territorio de Nápoles otras muchas localidades que ofrecen gran interés turístico.

El extranjero las encontrará fácilmente sin necesidad de recurrir

a guías inútiles o a indicaciones que no responden a su gusto y a sus deseos.

Descubrirá por doquiera aspectos nuevos y seductores, vistas panorámicas que no se borran de su memoria, sugestivos y monumentales recuerdos del pasado que hablan a nuestra imaginación y a nuestra alma, pintorescas escenas de una vida serena y alegre, que hacen vivir al viajero horas maravillosas, horas de felicidad.

Parece que en este rincón de tierra privilegiada, hombres y cosas cantan eternamente a la Naturaleza un himno de agradecimiento por la maravillosa variedad de dones que pródigamente derramó sobre ella.

Carretera Amalfitana

INFORMACIONES UTILES

Hoteles

CATEGORIA S

EXCELSIOR
frente al mar, vía Partenope.

CATEGORIA A

GRAND HOTEL
frente al mar, vía Caracciolo.

ROYAL
frente al mar, vía Partenope.

VESUVE
frente al mar, vía Partenope.

CATEGORIA B

CONTINENTAL
frente al mar, vía Partenope.

LONDRA
en la ciudad, Piazza Municipio.

METROPOLE
frente al mar, vía Partenope.

PARKER'S
en colina, Corso Vittorio Emanuele.

S. LUCIA
frente al mar, vía Partenope.

TERMINUS
en la ciudad, Estación Central, lado de las llegadas de los trenes.

CATEGORIA C

BRITANNIQUE
en colina, Corso Vittorio Emanuele.

ISOTTA & GENEVE
en la ciudad, Piazza Medina.

PATRIA
en la ciudad, vía Sanfelice.

RIVIERA
en la ciudad, Riviera di Chiaia.

TOLEDO-REGINA
en la ciudad, vía Roma.

UNIVERSO
en la ciudad, Piazza Carità.

VITTORIA
frente al mar, vía Partenope.

PENSIONES

ALEXANDRA HOUSE
frente al mar, vía Caracciolo.

BOLE
en la ciudad, Parque Margherita.

CORONA
frente al mar, vía Caracciolo.

DINESEN
en la ciudad, Piazza Amedeo.

LORELEY
salita Piedigrotta, cerca de la Estación de Mergellina.

MARGHERITA
en colina, Vomero.

MARTINELLI
frente al mar, Posillipo.

MAURICE
frente al mar, vía Partenope.

MIDI (du)
en la ciudad, Piazza Amedeo.

PINTO STOREY
en la ciudad, Piazza Amedeo.

WASHINGTON-HOUSE
en la ciudad, Parque Margherita.

WEST END
en la ciudad, Salita Piedigrotta 1.

Restaurantes

EN LA CIUDAD

«DA RAFELE»
vía S. Brigida 36.

GAMBRINUS
piazza Trieste e Trento.

ALCAZAR
vía Nazario Sauro.

«DA GIACOMINO»
vía S. Carlo.

UMBERTO
vía S. Carlo (esquina).

FALSTAFF
piazza Carità.

BARILE D'ORO
vía Gennaro Serra.

AI DUE LEONI
piazza Francese 200.

D'EUROPA
vía De Pretis 129.

DA CIRO
vía S. Brigida.

PIZZERIA NAPOLETANA «MATOZZI»
piazza Carità.

Frente al mar: (con orquestas fijas)

ALLEGRIA
vía Posillipo.

BERSAGLIERA
Banchina S. Lucia.

CASO
Borgo Marinaro.

«DA GIUSEPPONE»
Discesa Capo Posillipo.

GIARDINI DI POSILLIPO
vía Posillipo.

«DA ROSIELLO»
Marechiaro.

«ZI TERESA»
Banchina S. Lucia.

ROTONDA
Discesa Coroglia.

En colina: (con orquestitas fijas)

BELVEDERE
cerca del Museo de S. Martino.

«DA ANGELO»
vía Aniello Falcone.

MIRANAPOLI
cerca del Museo de S. Martino.

RENZO E LUCIA
cerca del Museo de S. Martino.

«DA GIACOMINO»
Posillipo Alto.

Teatros

REAL TEATRO SAN CARLOS
Gran temporada de ópera (de diciembre a abril).

REAL POLITEAMA GIACOSA
Prosa, operetas, revistas, varietés.

FIORENTINI
Prosa, revistas.

BELLINI
lírica, prosa, operetas.

ITALIA
lírica, prosa, operetas, varietés.

ELDORADO LUCIA
(abierto en verano), varietés, revistas.

Cinematógrafos

AUGUSTEO
varietés, revistas, cinema.

DIANA
(en el Vomero), prosa, varietés, revistas, cinema.

SALA ROMA
varietés, cinema.

SANTA LUCIA
prosa, operetas, revistas, cinema, varietés.

SANNAZARO
varietés, cinema.

SALON MARGHERITA
varietés, revistas, cinema.

KURSAAL
cinema solamente.

MODERNISSIMO
cinema solamente.

UMBERTO I
cinema solamente.

Dancings

NIGHT CLUB
del Royal (abierto en invierno), vía Partenope.

ROYAL ROOF GARDEN
(abierto en verano), vía Partenope.

LA PERGOLA
Hotel Vesuvio, vía Partenope.

«LA STIVA»
del Grand Hotel (abierto in invierno).

«GIARDINO DEGLI ARANCI»
(abierto en verano), Cuarto Funicular, Posillipo Alto.

LE LUCCIOLE
Parque de la «Rimembranza», Posillipo.

ALCAZAR
Music-Hall, vía Nazario Sauro, (S. Lucia).

LA PINETA
en la autopista (Torre del Greco).

Salones de The

— con orquestita —

CAFLISCH
vía Partenope.

VICTORIA
vía Partenope (abierto en verano).

MIDDLETON
vía Partenope.

TEA-ROOM CAFLISCH
vía Roma.

TEA-ROOM CAFLISCH
vía Chiaia.

SALA FILANGIERI
vía Gaetano Filangieri.

Líneas de tranvías y de Autobuses de Turismo

TRANVIAS:

Para Posillipo: Líneas N.° 1, 2.

Para Mergellina: Línea N.° 3 (enlace con el IV Funicular a Posillipo Alto).

Para la Estación Circunvesubiana: Línea N.° 4.

Para el Museo y Capodimonte: Línea N.° 18.

Para el Museo de S. Martino: Línea N.° 7.

Para vía Tasso-Villanova (Giardini degli Aranci): Línea N.° 20.

Para Agnano: Línea N.° 30.

Para Pozzuoli: Línea N.° 52.

Para Ercolano - Torre del Greco: Línea N.° 55.

Para Pugliano: Línea N.° 57.

AUTOBUSES:

Capo Posillipo - Marechiaro: N.° 15 (1° junio-15 septiembre).

Capo Posillipo - Cuarto Funicular: N.° 12 (1° junio-15 septiembre).

S. Ferdinando - Parque de la « Rimembranza »: los días de fiesta (1° junio-15 septiembre).

FUNICULARES:

Chiaia-Vomero
Montesanto-Vomero
Via Roma-Vomero
Mergellina-Posillipo Alto
} salidas cada 10 y 15 minutos.

FERROCARRILES SECUNDARIOS.

METROPOLITANO: para los Campos Flegrei.

CUMA: para la Zona Flegrea (Agnano - Pozzuoli - Arco Felice - Lucrino - Baia - Cuma - Fusaro - Torregaveta). Salidas frecuentes y enlace con los barcos que van a Procida, Porto d'Ischia, Casamicciola.

CIRCUNVESUBIANO: para Pugliano (Vesubio) y para Pompeya - Sorrento. Salidas cada media hora.

BARCOS - LINEAS DE NAVEGACION EN EL GOLFO:

Para CAPRI: Salida de Nápoles a las 9 de la mañana y regreso por la tarde (paseo).
Salida de Nápoles por la tarde y regreso a Nápoles por la mañana (vapor correo).
Duración media del viaje: dos horas.

Para SORRENTO: Salida de Nápoles a las 9 de la mañana y regreso a Nápoles por la tarde (paseo).
Salida de Nápoles por la tarde y regreso a Nápoles por la mañana (vapor correo).
Duración media del viaje: una hora y veinte minutos.

Para ISCHIA: Salida de Nápoles por la mañana y regreso a Nápoles por la tarde (paseo) - (del 15 de mayo al 15 de octubre).
Salida de Nápoles por la tarde y regreso a Nápoles por la mañana (vapor correo) - (del 16 de octubre al 15 de junio).
Duración media del viaje: dos horas.

SERVICIO DE AUTOMOVILES DE GRAN TURISMO:
Nápoles - Pompeya - Amalfi - Castellammare - Nápoles (circuito de la Península Sorrentina).
Salida a las 8,30 de la Piazza Vittoria; durante todo el año.

SERVICIO DE AUTOMOVILES DE GRAN TURISMO:
para **Paestum** (del 15 de febrero al 31 de mayo);
para la **Zona Flegrea**;
para **Agerola** (julio-agosto);
para **Ercolano**;
para **Sorrento**;
para **Roccaraso** (deportes invernales);
para **Montevergine** (deportes invernales).

Para el Vesubio

Se puede subir al Vesubio por medio del Ferrocarril eléctrico Circunvesubiano (estación en el Corso Garibaldi). Los trenes salen cada hora. Se baja en la estación de Pugliano, y aquí se toma el funicular Vesubiano, que llega hasta el cráter; se puede ir también por la autopista hasta Pugliano y tomar aquí el funicular que conduce al cráter. Se puede ir también por la autopista hasta Torre Annunziata, y desde allí, en automóvil, por la carretera Matrone, que conduce al cráter.

Para Pompeya

Ferrocarril Circunvesubiano (Estación Corso Garibaldi). Los trenes salen cada hora para la estación Pompeya-Scavi (Villa de los Misterios).
En automóvil: por la autopista Nápoles-Pompeya (30 minutos).
Ferrocarriles del Estado: Nápoles-Pompeya-Santuario.

Para Ercolano

Ferrocarril Circunvesubiano: los trenes salen cada veinte minutos; se baja en la estación de Pugliano (Ercolano), de donde arranca una nueva y amplia carretera que conduce en pocos minutos hasta la entrada de las Excavaciones.
En automóvil: por la autopista (15 minutos).
Tranvía: N.° 55, desde la Piazza Municipio.

Lidos-Playas - Estaciones Balnearias

En la ciudad - En POSILLIPO: Villa Chierchia (Sea Garden).
Baño « Elena »
« Donn'Anna »
Baño « Sirene »
(Líneas de tranvías y autobuses de la ciudad).

En las inmediaciones: Coroglio (a treinta minutos del centro de la ciudad). Bagnoli (a treinta minutos del centro de la ciudad). Pozzuoli, Arco Felice, Lucrino, Bacoli, Torregaveta (Ferrocarril Cumano: duración media del recorrido, 30 minutos).

En la vertiente Vesubiana: Portici, Resina, Torre del Greco (30-50 minutos desde el centro).

CAPRI: Establecimientos Balnearios en la « Marina Grande », en la « Marina Piccola » y en la playa « Saracena », abiertos todo el año. Estación Balnearia también en los meses de invierno.

CASTELLAMMARE: Playa del Scraio (Hacia Vico Equense).

SORRENTO: Establecimientos balnearios en: Vico Equense, Sejano, Meta, Piano, S. Agnello, Marina Grande y Marina Piccola de Sorrento. Cada hotel tiene su playa para el baño.

ISCHIA: Gran Establecimiento Balneario en Porto d'Ischia; extensa playa con arena de naturaleza radioactiva. Pinar.

POSITANO: A la mitad del camino entre Nápoles y Sorrento. Empalme con Meta (una hora de automóvil desde Nápoles). Estación balnearia también en los meses de invierno.

Estaciones Hidrotermales

AGNANO: Fangos, baños, estufas naturales (a veinte minutos del centro de la ciudad).

ISCHIA: Aguas, arenas radioactivas, estufas de calor húmedo (a dos horas de la ciudad). Hay servicio de barcos.

CASAMICCIOLA: Fangos termales, estufas sudatorias, baños, aplicaciones de fangos, inhalaciones, curas especialmente indicadas para las afecciones ginecológicas (a dos horas de la ciudad). Hay servicio de barcos.

LACCO AMENO, En la Isola d'Ischia: Aguas de Santa Restituta contra la esterilidad; estufas e inhalaciones naturales.

CASTELLAMMARE: Veinticuatro manantiales minerales de las más ricas variedades y propiedades curativas (40 minutos del centro; Circunvesubiano, Littorina).

POZZUOLI: Termas Puteolane; estufas, fangos (a 30 minutos de la ciudad).

Singularidades caracteristicas

ACUARIO: en la «villa Comunale», la más completa Estación ictiológica de Europa (Flora, Embriología, Biofísica, Fauna local, etc.).

SOLFATARA (Forum Vulcani): cerca de Pozzuoli (a veinte minutos del centro de la ciudad). Interesantes fenómenos volcánicos, únicos en el mundo: «Fangales hirvientes», «Bocas del Vapor», «Boca Grande», Fenomenología Volcánica en constante actividad.

GRUTA AZUL, de Capri.

Campos deportivos

Estadio Partenopeo: (antes Campo Ascarelli), para grandes competiciones de campeonato.

Piscina cubierta: aneja al Estadio Partenopeo.

Campo deportivo militar de la Arenaccia: para el Concurso hípico internacional.

Estadio del Littorio: (en el Vomero), para concursos de atletismo, campeonatos de tennis, partidos de balón-cesto y de rugby.

Hipódromo de Agnano: (entre los más bellos y rientes de Italia, en situación espléndida); carreras al galope (verano e invierno), al trote (primavera, otoño).

Tennis «Napoli»: (en la «villa Comunale»). Gran campo central dotado de tribunas para torneos internacionales. Los forasteros pueden jugar avisándolo con anticipación en los hoteles. Tarifa por una hora: 5 liras.

Tennis Canottieri «Napoli»: (en el «Molosiglio»).

Yachting: grandes regatas internacionales a la vela en el mes de junio.

Actividades deportivas

Hipismo: reuniones semanales de cacerías a caballo, de noviembre a abril. Concurso hípico internacional en abril.

Tennis: dos grandes torneos internacionales en Nápoles y Capri, en abril y septiembre.

Yachting y remo: clubs de regatas a la vela y a remo: R. C. C. Italia, R. C. C. Savoia (banchina S. Lucia), Círculo de la Vela, Club Náutico (porticciuolo de S. Lucia), R. C. C. Napoli (en el Molosiglio).

Tiro de pichón: campo de tiro de pichón en Agnano.

Esquí y deportes invernales: estación de deportes invernales en Roccaraso y en Montevergine, ambas a dos horas de Nápoles.

Automovilismo: Gran Premio Internacional «Circuito de Nápoles» (octubre) y concurso de elegancia para automóviles, gymcanas, reuniones, etc. (abril y mayo).

Esgrima: Gran Academia Nacional de Esgrima.

Fútbol: Campeonato de división nacional.

Balón-cesto: Campeonato de división nacional para jugadores de ambos sexos.

NOTA: Dirigiéndose a la dirección de los hoteles los forasteros pueden obtener billetes de invitación o de inscripción temporal en los varios clubs.

Ritos y tradiciones religiosas

Procesión y milagro de San Jenaro: (19 de septiembre); pocesión de las estatuas de plata de San Jenaro y de los Santos Titulares de las principales Congregaciones de Nápoles. Solemnes ceremonias para celebrar la milagrosa « licuación de la Sangre de San Jenaro ».

En Pozzuoli: Piedra con la Sangre de San Jenaro, que se licúa el 19 de septiembre, simultáneamente a la sangre contenida en el relicario conservado en la Catedral de Nápoles, y el otro en España.

Incendio del Campanil del Carmen: (el 15 de julio), con ocasión de los festejos en honor de la Virgen, en Piazza del Carmine. Fuegos artificiales, luminarias populares.

Fiesta de los « Cuatro Altares » en Torre del Greco: Grandiosas reproducciones de Catedrales y reconstrucciones de altares, todas hechas en cartonajes y con labores de flores. En algunos barrios las calles son cubiertas de artísticos alfombras de flores tan anchas como las calles, con artísticas dibujos y alegorías en arena colorada. Durante estas típicas manifestaciones tienen lugar importantes competiciones entre los artesanos locales (el miércoles y el jueves después del Corpus Domine).

Sagrados ritos de la Festividad de San Juan Bautista en S. Gregorio Armeno, donde se conserva el relicario de Santa Patricia con la sangre de la Santa, un sagrado clavo de Cristo y otro relicario con las dos ampollas que contienen la sangre de San Juan Bautista, que se licúa el día de la festividad del Santo (24 de junio).

Los « Gigli » de Nola: (último domingo de junio) a 25 minutos de Nápoles; (tranvía-ferrocarril). Gigantescos campanarios de madera, revestidos de oros y de estucos, coronados por un santo y una alegoría, de cuatro o cinco pisos y con enteras orquestas. Llevados a hombros por robustos hombres, estos campanarios bailan, de cuando en cuando, al compás de las orquestas, dando la singular y bizarra sensación de gigantescos instrumentos musicales animados, pues la música que difunden por la plaza es irradiada por la banda colocada por encima de ellos.

Montevergine: (en Pentecostés y en septiembre), fiesta en el Santuario del mismo nombre, en el Monte Partenio (en automóvil, a dos horas de Nápoles). Gran romería desde Nápoles en coches y automóviles adornados de flores; todos los romeros van vestidos del mismo color de los coches.

Piedigrotta (7, 8, 9 de septiembre). Rito antiquísimo; la más famosa de las fiestas napolitanas, por la devoción popular que, en esta virgencita amable y recoleta, tiene puestos sus más fervorosos amores de fe. La virgencita de Piedigrotta tiene su templo cerca de la histórica gruta. Durante dichos días se celebran cortejos de carros alegóricos y cabalgatas históricas que recorren la ciudad.


NÁPOLES
PALAZZO REALE DI CAPODIMONTE
PER L'AEROPORTO DI CAPODICHINO
STRADA DI CAPODICHINO
ORTO BOTANICO
VIA FORIA
PORTA CAPUANA
DUOMO
CORSO GARIBALDI
VIA NUOVA CAPODIMONTE
VIA PEDINA
PIAZZA DANTE
VIA TRIBUNALI
VIA DUOMO
S. CHIARA
UNIVERSITÀ
STAZIONE CIRCUMVESUV.
NUOVO RIONE ARENELLA
VIA SALVATOR ROSA
CAMPO DEL LITTORIO
FUNICOLARE DI MONTESANTO
VOMERO
Castel S. Elmo
VIA SCARLATTI
VIA CIMAROSA
STRADA BELVEDERE
VIA A FALCONE
VIA TASSO
S. MARTINO
Floridiana
CORSO VITTORIO EMANUELE
VIA ROMA
NUOVO PALAZZO DELLA POSTA
BORSA
CORSO UMBERTO I° (RETTIFILO)
FEDERAZIONE FASCISTA
Municipio
GALLERIA UMBERTO I
CASTEL NUOVO
PORTO MERCANTILE
DARSENA
NUOVA STAZ. MARITTIMA
PALAZZO REALE
VIA CHIAIA
PARCO MARGHERITA
VIA DEI MILLE
VIA CRISPI
MOLO BEVERELLO
STAZ.ne MERGELLINA
RIVIERA DI CHIAIA
TENNIS
S. FRANCESCO DI PAOLA
GALLERIA DELLA VITTORIA
S. LUCIA
LITORANEA
MOLO S. VINCENZO
VIA PIEDIGROTTA
VIA MERGELLINA
VIALE PR. ELENA
Via Caracciolo
G. Posillipo
VIA CHIAIAMONE
VIA PARTENOPE
VIA N. Sauro
CASTELLO DELL'OVO
Mare Tirreno
N
O
E
S


CUMA
GROTTA DELLA SIBILLA
LAGO AVERNO
LAGO FUSARO
PER L'ISOLA D'ISCHIA
BAIA
LIDO LUCRINO
TORRE GAVETA
BACOLI
MARE MORTO
C. MISENO
Golfo di Pozzuoli
POZZUOLI
ANFITEATRO
SOLFATARA
IPPODROMO
TERME
AGNANO
BAGNOLI
NISIDA
ROTONDA
CAPO POSILLIPO
NAPOLI ISCHIA
PALAZZO DONNANNA
MARECHIARO


AUTOSTRADA
FERROVIA CIRCUMVESUVIANA
EPOMEO
VESUVIO
POZZUOLI
TORRE DEL GRECO
TORRE ANNUNZIATA
Golfo di Napoli
POMPEI
SCAFATI
PAGANI
NOCERA
CAVA
ANGRI
SALERNO
VIETRI
TERME
CASTELLAMARE
VICO SORRENTO
SEIANO
META
PAVELLO
MINORI
MAIORI
AMALFI
POSITANO
SORRENTO
MASSALUBRENSE
TAGLIA
TERMINI
CAPRI
Golfo di Salerno
PESTO

RECORRIDOS KILOMETRICOS (IDA Y VUELTA) DESDE NAPOLES A LOS CENTROS DE MAYOR ATRACTIVO TURISTICO MAS CERCANOS

Nápoles - Pompeya - Amalfi - Sorrento - Nápoles	Kms.	152
Nápoles - Pugliano - Pompeya - Nápoles	Kms.	27
Nápoles - Circuito de los Campos Flegrei - Nápoles	Kms.	67
Nápoles - Caserta - Capodimonte - Nápoles	Kms.	46
Nápoles - Sorrento - Capri - Nápoles	Millas	22.7
Nápoles - Pugliano - Vesubio - Nápoles	Kms.	38
Nápoles - Pompeya - Sarno - Ottaiano - Nápoles	Kms.	83
Nápoles - Pozzuoli - Baia - Fusaro - Torregaveta - Nápoles	Kms.	40
Nápoles - Aversa - Capua - Piedimonte D'Alife - Nápoles	Kms.	158
Nápoles - Nola - Baiano - Nápoles .	Kms.	76

DIREZIONE GENERALE PER IL TURISMC

FERROVIE DELLO STATC

Printed in Italy by the ENIT 1936-XIV

PIZZI & PIZIO - MILANO-ROMA

E

Naples to Brindisi

This trip carries us south along the coast for a few miles with farming like that near Naples, then across the country and along the east coast. In the interior the general

Figure 91. View near Naples

appearance was somewhat similar to the "hill country" north of Rome, but with more steep, non-arable land and generally poorer crops, especially grain. In the Apennines the mountains were limestone with Terra Rossa soils on the foothills and narrow first bottoms. On the latter vegetables were grown. Much of the land was farmed in small patches, isolated because of the irregular landscape. Grapes, olives, and fruits were

grown, and also wheat and other grains, with the trees, and separately. The grain seemed poor, probably in part because of drought. There were some terraces on which the crops were better, but not many. Much of the grain was lodged, possibly because of potash deficiency. The steep hills appeared dry and have mostly only a thin scrubby forest. From the train there appeared to be rolling plateaus back in the hills with "hill towns" similar to those north of Rome, but less prosperous.

It appeared that a considerable portion of this land had been abandoned. Certainly some of it was too steep and was eroding. Here is a place where pressure for land has forced people to cultivate land to their own sorrow and with no good to the land. As we came to the east side of the uplands, there was soil developed from old marine clays. This land was badly eroded. How much of this is accelerated and how much "geological" it was impossible to judge from the train. Certainly it is badly in need of control now. Just west of these clays was an area

Figure 92. A view near Brindisi.

of reddish, weakly developed Terra Rossa soils, developed from cherty limestones. On the associated old terraces (probably of glacial age) there appeared to be well developed Terra Rossa soils.

It was nearly dark as we came out upon the coastal plain, much of which was quite sandy here.

P.fo «PALESTINA»

I. CLASSE

6 - 6 - 1938 - XVI

Concerto

Alle ore 16.30

Strauss - Rose del Sud - Valzer

Panizzi - Strimpellata amorosa - Serenata

Pietri - La donna perduta - Fantasia

De Micheli - Serenata di baci

Bianco - Destino - Tango

Edizioni Propaganda
Italia - Lloyd Triestino - Adriatica Tirrenia

Stampato in Italia (Prin
Alfieri & Lacroix S. A

Athens to Delphi

The main soils along this road were about as follows:

(1) Azonal skeletal soils developed from limestones, shale, clay rocks, etc. These are erosive when exposed because of the extreme slope, especially the latter. Much of this land likely never had much if any soil covering, and much of it likely had a great deal more than at present. Now it is

Figure 93. Goats on the scanty pastures near Athens.

covered with a scanty growth of xerophytic plants, evergreen shrubs, and a few pine trees. It is possible that much of this land was once fairly well forested. I don't know. At present goats are pastured, unfortunately for the land.

(2) Hilly Terra Rossa. Much of this red soil is quite thin, but where well terraced appears suitable for olives and vines. These terraces are all of the wall type, made from stones. Much of the land is very cherty or stony ("hard heads"). The wheat is poor, although much is grown.

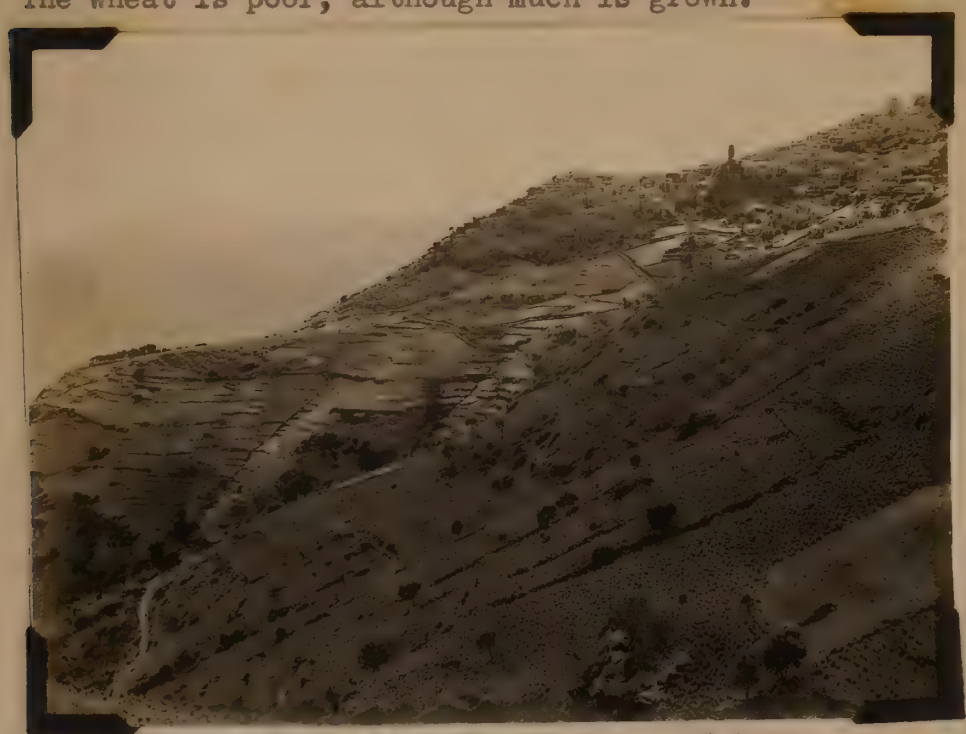


Figure 94.A view of well terraced hilly Terra Rossa near Delphi.

Figure 95. Another view near the one shown in Figure 94. The soils are similar, but erosion has followed deterioration of the terraces.

(3) Terra Rossa on terraces. The soil appears to have a good structure. There is much wheat, although rather poor--10 to 20 bushels to the acre. Cotton is being developed and now it is just nicely up. Some of this soil is very dark--Chernozem--like--and in a few places I noted a lime zone; whereas in other places there was none. This soil has likely suffered little or no accelerated erosion, partly because of its generally smooth relief and because of the porous character of the soil. Much of it is used for wheat for which it does not appear to be well adapted.

(4) Rendzina. There is a considerable area of Rendzina with very dark surface soil of 6 to 12 inches, underlain by a transitional B of 12 to 30 inches, and a light gray (nearly white) C. A few white spots are showing on some of the sharper knolls but on the whole there has been astonishingly little erosion considering the character of the soil and rolling to strongly rolling relief. It is possible that this soil supported excellent pasture in the early days and was not plowed until modern times. At present it is all cultivated, especially for wheat. The wheat is better than on associated upland soils.

(5) Alluvial soils. There are several types of alluvial soils developed on first bottoms of streams, on alluvial fans, and in old ponded areas. A few spots near the sea are salty

(Solonchak). Associated with these alluvial soils are poorly drained gray soils merging into true Wiesenboden. On these wheat, cotton, and onions are grown.

The old lake bottom has been reclaimed by an English concern and this land, together with adjacent terraces, is quite productive. The land is both drained and irrigated. Here a

Figure 96. Cotton on rather heavy Reddish Brown(?) soil from alluvium. Near Thebes.

little modern machinery is used, but for the most part the land is farmed by hand as elsewhere. Most of the plowing is apparently done by oxen here.

On the whole in this region there are too many goats. The pastures have but little grass. It would appear that the soils

have poor, if any, fertilization and certainly more phosphorus

Figure 97. Goat pens in caves, like those of ancient Greece.

is needed. Also the land needs more grass. There is but little in the way of grass crops; what hay there is consists largely of oats cut green. But until yields are higher it would be difficult to get farmers to "lay grass"--the familiar dilemma when there is great pressure on the land. Here as elsewhere, Scientific agriculture will need to do several things at once to succeed. Much of soils 4 and 5 are irrigated, but many fields are spotty and indicate rather poor irrigation.

Most of the grain is cut with hand sickles and bound on to the backs of donkeys or small horses or fastened to little cars. Most of the cultivation is done by hand with a heavy hoe.

Figure 98. Most of the grain is cut by hand.

Figure 99. Near Thebes.

Figure 100. Home with the wheat.

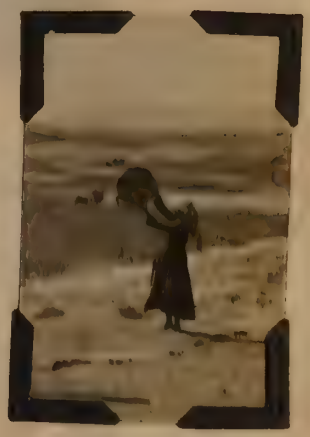


Figure 101. Threshing

Figure 102. Coming home

Figure 103. Near Thebes.

Both men and women work together in the fields, frequently in rather large groups. The people are very poor and work hard, yet they may be content. Many of the women wore homespun clothing. It does seem a pity that people must work so very hard for so little. I saw one pair of oxen, but no other cattle. There were, however, many goats and a few sheep. I saw pens for these animals, likely very much like those of Homer's time (Figure 97).

Figure 104. A characteristic peasant woman near Delphi. Note homespun clothing.

Figure 105. Bees, near Thebes, making the famous Greek honey

Near Delphi there is a hill village with a neat olive grove below and grapes grown behind wall terraces. I saw one olive tree near Athens reputed to be 2000 years old! These trees require good care to be protected from insects. Also the

Figure 106. A New Dealer inspects an olive tree 2,500 years old. Near Athens.

grapes are well sprayed. The good olive trees are among the people's most choice possessions and are the best dowry for the peasant maiden.

Figure 107. Temple of Apollo at Delphi.

Figure 108. Olive grove directly below the temple of Apollo.

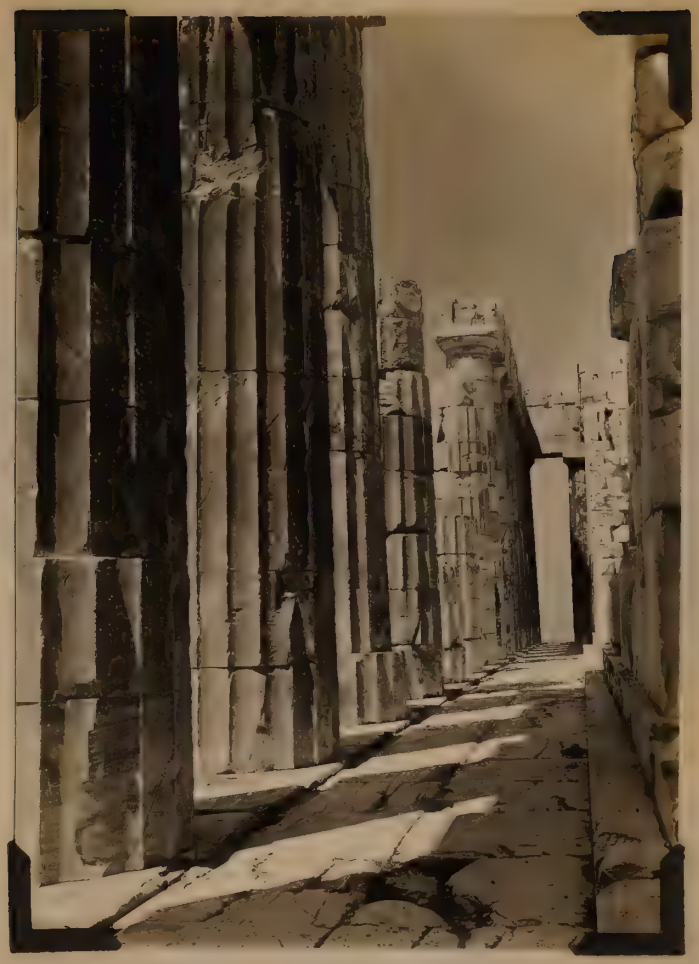


Figure 109. View within the Parthenon.

Figure 110. The Parthenon.

Figure 111. View of Athens from the Acropolis. Hadrian's Arch in center foreground. Temple of Jupiter just back of it. Stadium in left center.

Figure 112. Instruction on the Acropolis.

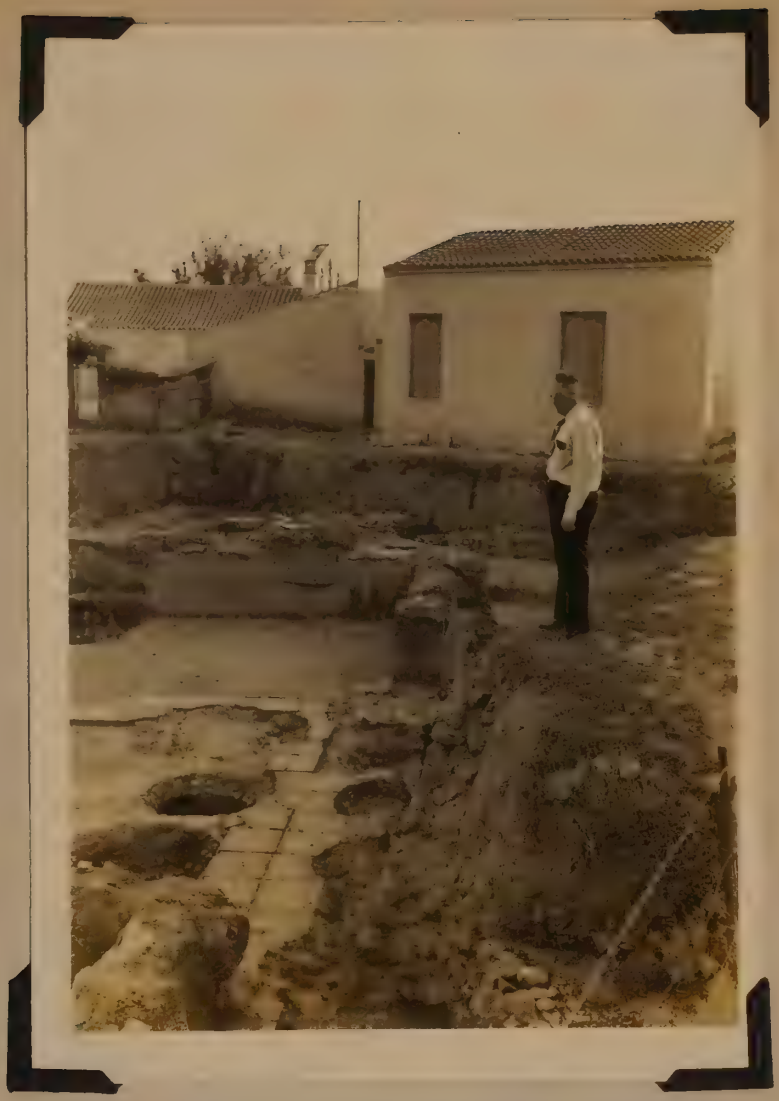


Figure 113. A modern American cultural anthropologist at the school of Plato.

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THE ACROPOLIS

AND ITS MUSEUM

BY GEORGE SOTIRIADES PROF. DR PHIL.

Part I.—The Acropolis

with 20 Illustrations.

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1935

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I

THE ACROPOLIS

The Acropolis of Athens, a hard limestone rock with precipitous sides except on the west, rises to a height of 156 metres[1] above the sea level. Its width is also 156 metres, its length 270 metres, its shape from east to west is oval and its area is about 30,000 square metres. It is situated in the midst of the plain of Attika, which is bounded on the east by Mt Hymettus (1027 m.), on the north-east by Mt Pentelicon (1110 m.), on the north by Mt Parnes (1423 m.) and on the west by Mt Aegaleus (468 m.). The original town of Athens was built entirely on this rock, which was fortified by high and strong walls, from 4.50 to 6 metres in thickness. Remains of these, which can still be seen to the south of the Propylaea and by the east wall, as well as in other places, are shown in Figure 2.

These walls are called Pelasgian or Cyclopean and were built during the 2nd millenium B. C. At this time,

[1] 1 metre=3 feet, 3 inches, approximately.

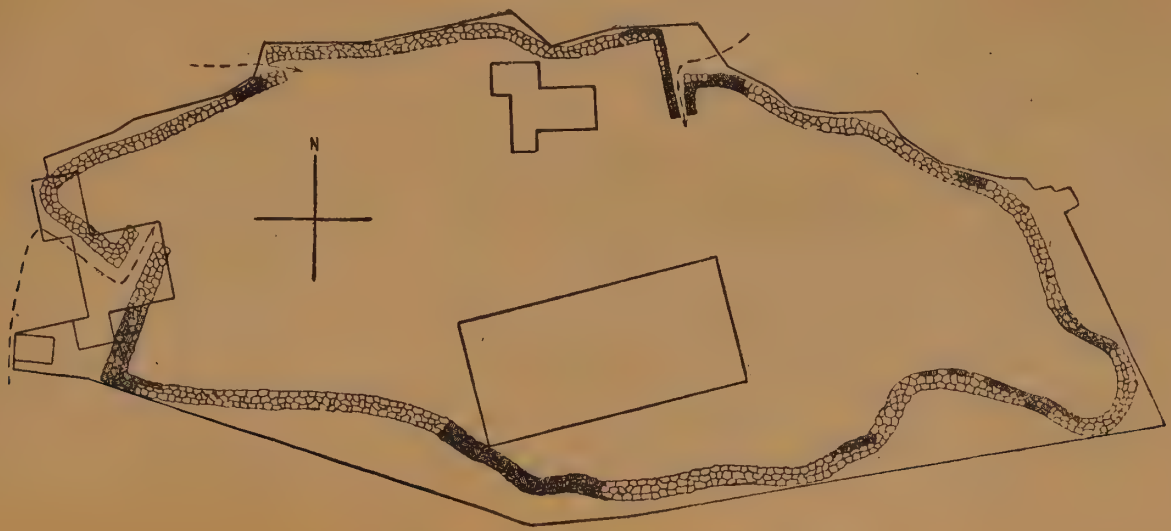

Figure 2. — The Pelasgian walls.

between 2000 and 1000 B. C. and particularly between 1500 and 1200 B. C., an important civilisation flourished in Greece, the centre and home of whiéh was in the large island of Crete. The most important town in Greece was at that time Mycenae, not far from Nauplia, in Argolis. This was the capital of Agamemnon, the richest and most powerful of all the kings of Greece which was then divided into many small kingdoms. As the foremost leader of Greece he made war against Troy and this war has been immortalized by Homer in his Iliad. Owing to Mycenae being the first town of Greece in the 2nd millenium B. C., the civilisation of this period is called Mycenaean. At Mycenae were found the tombs of the ancient kings, and the golden treasure and other objects from them can be seen in the National Museum.

Athens at this time was built entirely on the rock. It was called the « Polis » (town) and within it dwelt the king and the nobles, while the labourers, tradespeople and the rest must have dwelt in little villages scattered about the plain. When in later years, probably long after 1000 B. C., the town spread below the rock, the lower town was called the « Asty » (city) and the rock itself the Acropolis (i. e. the upper town or citadel). Gradually however the people ceased to live upon the Acropolis which was then given up entirely to the worship of the gods, and especially to that of Athena, the protecting goddess of the city. Only during the reigns of the usupers of the kingly power, Peisistratus and his sons (560-510 B. C.), did it again serve as a dwelling place and fortress.

The Acropolis was always fortified by walls, but the Pelasgian walls only remained intact until 480 B. C., when

the Persians captured it. After the Greeks had driven them out by the naval battle of Salamis in 480 B. C. and by the battle of Plataea in 479 B. C., they entirely renewed the old fortifications and even extended them. Themistocles, who commanded the Greek fleet at Salamis, built the northern wall in 478 B. C. as it stands today and Cimon, his contemporary and successor. erected the southern aud eastern walls in 465 B. C. The outer face of the eastern and southern walls has been since restored, first by the Venetians about 1400 A. D. and later during the Turkish period 1456-1833 A. D.

Belonging to the most ancient period of the history of Athens can still be seen not only the remains of the Pelasgian or Mycenaean walls. which have been mentioned above, but also traces of the palace and other dwellings. These, which we shall have to refer to again, are on the north side of the Acropolis and near the Erechtheum. At this time the Greeks built neither temples for their gods, nor made statues in their honour, but simply erected altars and worshipped in sacred groves. The earliest temples on the Acropolis were built about 700 B. C. and about the same time statues to the gods were made out of the trunks of trees. These wooden statues were called « xoana ».

With the increasing prosperity of the city, art also progressed and so between 700 and 480 B. C. the Acropolis was adorned by many temples and numerous statues. The temples were built of « poros », a kind of soft limestone, and the sculptures were at first of the same material though afterwards marble was used. All these architectural and sculptured monuments were barbarously destroyed by the Persians in 480 and 479 B. C. After

409 the Athenians began the task of rebuilding the monuments on the Acropolis, no longer however in «poros» but in the beautiful Pentelic marble. The most beautiful of all these buildings were made in the time of Pericles (460-431 B. C.), and all the magnificent monuments we see on the Acropolis today are relics of that age[1]. The finest of these buildings, the Propylaea, the Parthenon and the Erechteum were almost in a state of perfect preservation until 285 years ago. But in 1645 a thunderbolt fell into the powder magazine, which was in the Propylaea, and an explosion wrecked this marvellous building. In 1687 the beseiging Venetians, under the command of Morosini, threw a bomb into the powder magazine, then in the Parthenon, and so this famous temple was also destroyed. In the same year the Turks demolished the elegant temple of the Wingless Victory and with the stones built a bastion in tho Propylaea, but after 1833 the temple was re-erected out of its original blocks. In 1802 Lord Elgin took almost all the sculptured blocks from the Parthenon and removed them to London and finally 1826 and 1827, during the war of Independence, the monuments were again damaged by the beseiging Turks who shot bombs from the hill of Philopappus on to the Acropolis.

Of the two following illustrations, the first (Figure 3) shows the Acropolis from the west as it was in the most glorious years of ancient Greece, that is to say in the 5th century B. C., other (Figure 4) shows how the entrance was changed under the Romans about the 1st century A.D.

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[1] See Figure 1 page 18 which represents a view of the Acropolis showing the principal monuments of the classical age.

The Entrance to the Acropolis.

The two towers at the present entrance to the Acropolis were built during the Roman period, perhaps as far back as the reing of the Emperor Septimius Severus (193-211 A.D.). The present narrow doorway and the wall are built of stones taken from an ancient monument, demolished by the Romans, which stood a little to the west

Figure 3. — The entrance, in classical times.

of the theatre of Dionysus. The Romans, probably in the time of the Emperor Caligula about 40 A.D., built a large marble flight of steps with a road in the middle for the sacrificial animals, leading from these towers and the doorway up to the Propylaea (see Figure 4). The steps were destroyed under the Turkish rule and were only roughly reconstructed on the right hand side out of the ancient marbles after 1833. From about the 5th century B.C. down to the Roman period the entrance was on the

southern side below the tower of the Wingless Vitory (see Figure 3) and a paved road led in zig-zags up to the Propvlaea. Another similar road can be sedn even now at Delphi, leading from the entrace of the sacred enclosure up to the temple.

The bastion of Cimon; the Temple of the Wingless Victory; the base of the statue of Agrippa; the well of the Clepsydra.

Ascending the present steps we see on the right the bastion of Cimon, upon this was built in about 450 B.C. the little temple of the Wingless Victory. This exquisite building is shown in its restored state in Figure 5. It

Figure 4. — The entrance, in Roman times.

was a temple of Athena, who was given the name of Victory after the victories of the Greeks over the Persians, and was hence generally called the temple ot Athena Victory. In the front of the Temple was a doorway and

two windows, and within was a wooden statue of Athena, seated and holding in one hand her helmet and in the other a pomegranate. The frieze of the Temple, of which part is still to be seen, represents the victory of the Athenians over the Persians at Plataea in 479 B.C. In front of the Temple was an altar. All round the bastion was a balustrade, showing in relief winged figures emblematic of Victory decorating trophies or preparing

Figure 5. — The Temple of the Wingless Victory.

sacrifices to Athena. Fragments of these wonderful reliefs are to be seen in the Museum in the room on the right hand side of the entrance. The Temple is what is technically known as an 'Amphiprostyle Ionic Temple' which means that is it in the Ionic style and has columns at both ends.

Opposite the bastion of Cimon to the north stands a base of the Roman period. It was built in 27 B.C. and carried a statue of the Roman admiral Agrippa, son-in-law

of the Emperor Augustus, in a chariot, To the north of this base an ancient mediaeval stairway leads to the well of the Clepsydra which is now inside a small christian chapel dedicated to the Holy Apostles.

The Propylaea.

The oldest enclosure of Pelasgian walls ou the Acropolis is seen in Figure 2. The western side of it passed through the Propylaea but there was also an outer wall, which, passing outside the present entrance between the towers, enclosed the western side of the Acropolis, called in ancient times the Pelargikon. It also included some of the ground to the nortwest and perhaps also some on the south side. Of this wall not a fragment is now left, and the only existing remains belong to walls and other buildings of mediaeval and Turkish times.

In the inner Pelasgian wall which passed through the Propylaea, Peisistratus, in about 540 B.C., built an imposing gateway or 'Propylon' as the Greeks called such entrances. A part of this still survives behind the south west corner of the Propylaea. Pericles however undertook the construction of a noble marble building to form a 'farseen front' (τηλαυγὲς πρόσωπον) for the whole of the western end of the Acropolis. In 437 B. C. the architect Mnesicles began the work, which wes however interrupted in 432 B. C. before it was finished, by the Peloponnesian war which began in the spring of 431 B.C.

About ten million drachmas [1] were expended on this building. It was on the south side that the work remained unfinished. In Figure 6 we see the original, un-

[1] £ 400.000.

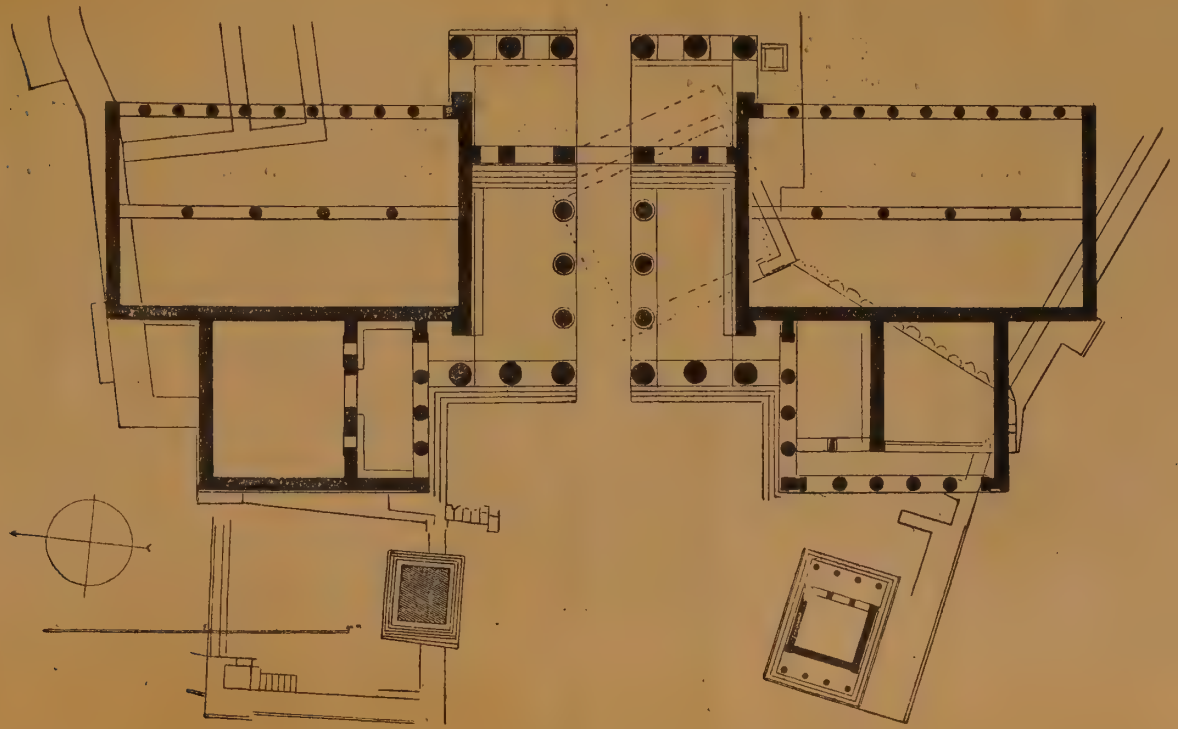

Figure 6. — The Mnesicles' Plan of the Propylaea.

accomplished plan of Mnesicles with the two wings on the west and the two porticoes on the east side; in Figure 7 we see how the south-west wing was intended to be completed. Figure 8 represents the restored view of the Propylaea.

This magnificent building consists of one central hall, the 'Propylon', and two rooms, which flank it on either side. It has in front six Doric colums which create

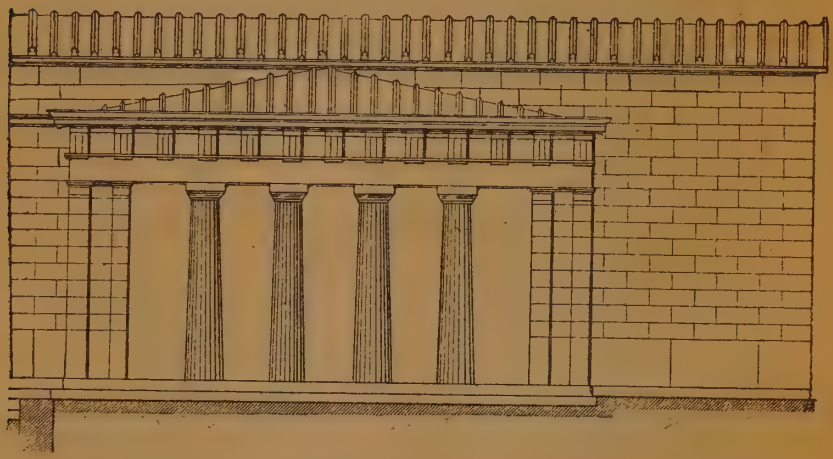

Figure 7. — The west wing restored.

a deep impression by their austere grandeur and stately simplicity. Within are six Ionic colums of more slender proportions and more richly decorated, which support the marble roof. Large wooden doors lead to the eastern portico, also supported by six Doric colums through which the incomparable view of the rich temples and innumerable works of art on ths Acropolis broke upon the gaze of the worshippers. Inside the hall were statues and works of art. The marble ceiling was decorated with

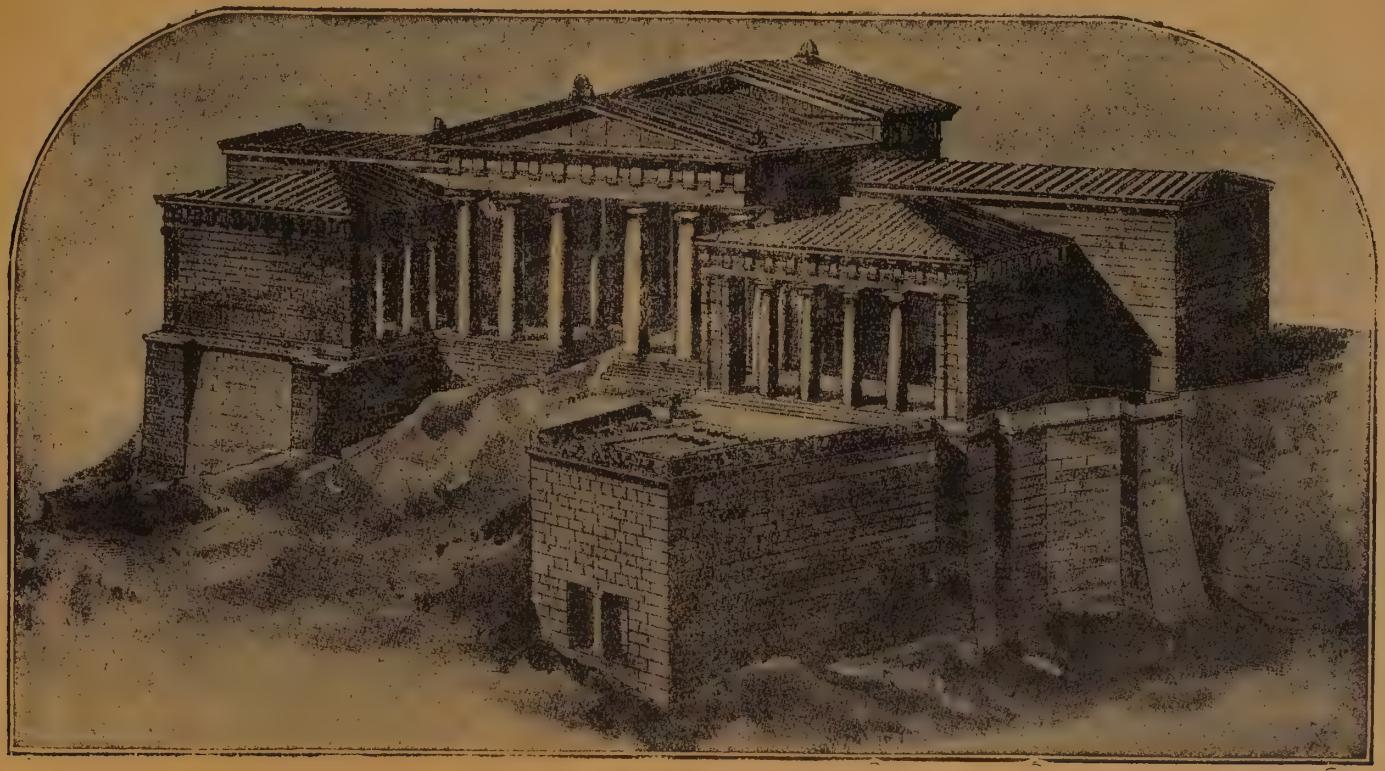

Figure 8. — The restaured view of the Propylaeo.

coloured panels, many of which are still preserved and have lately been restored to their original positions.

The beams of the ceiling, each 6.30 metres in length, ar also of marble; two of these, which were lying broken upon the pavement, were also put back in their original place. The room ont the north contained pictures and was therefore called the «Pinacotheca». On the two projecting walls in front of the Propylaea were bronze statues of horsemen and on the south the base of one with its inscription can still be seen. Inside the Propylaea on the east, two large porticoes were to have been built, but on account of the war they remained unfinished [1]. In 1387 the Franks built a large tower, afterwards taken down in 1875, ont of the stones from the Propylaea.

The Temple of Artemis Brauronia; the statue of Athena Promachus; the old Temple of Athena

When we pass through the Propylaea we have on our right the sacred enclasure of Artemis Braurona. (Brauron was a small village in Attica). At present nothing can be seen but the position of two porticoes, and of the temple itself not a fragment remains.

All over the Acropolis can be seen cuttings in the reck, marking the positions of inscribed columns, statues and other votive offerings. On entering the Acropolis and turning first to the right and then towards the west we see in the corner where the Pelasgian wall joins the Propylaea, remains of the earlier Propylon, built by Peisistratus.

Left of the entrance and about midway between the

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[1] See Figure 6.

Propylaea and the Erechtheum stood the great bronze statue of Athena Promachus or Polias (the protectress of the City), a work of the artist Pheidias.

If we walk straight on towards the east we find, between the Parthenon on the right and the Erechtheum on the left, the remains of the foundations of a large temple, which was built in 'poros' stone by Peisistratus between 548 and 520 B. C. This Athenian monarch, or as the ancients called him 'Tyrant', was a patron of poets and artists, and adorned Athens for the first time with fine public buildings. The plan of this ancient temple of Athena can be seen in Figure 9. Even before the time of Peisistratus there was another temple there, built, by Solon the law-giver of Athens not long after 594 B. C. Its length was 100 feet, but it had no colonnade.

Peisistratus however added the colonnade and ornamented the gables with marble statuary, still prsserved in the Museum: the corresponding sculptures of the Temple of Solon were of «poros». The Temple thus restored by Peisistratus, which was commonly called the Hecatompedon, was in the Doric style surrounded by a colonnade. The entrance to ancient Temples was almost always from the east. The first little room to the east, divided into three aisles, was the chief sanctuary or dwelling of the goddess and in it was the cultus-statue. The back part of the building to the west, which was called the « Opisthodomos » and consisted of a hall and two rooms, was used for storing the Temple treasure and for the offerings and vessels of the sanctuary. The altar on which the sacrifices were offered was outside the Temple in the open air. This Temple was burnt and destroyed by the Persians in 480 and 47h B. C., and the

Athenians afterwards used the drums of the colums, the architraves and the triglyphs as material of building the north wall of the Acropolis. A few capitals can be seen today to the west of the Parthenon, where they were dug up in the place where the Athenians had thrown them

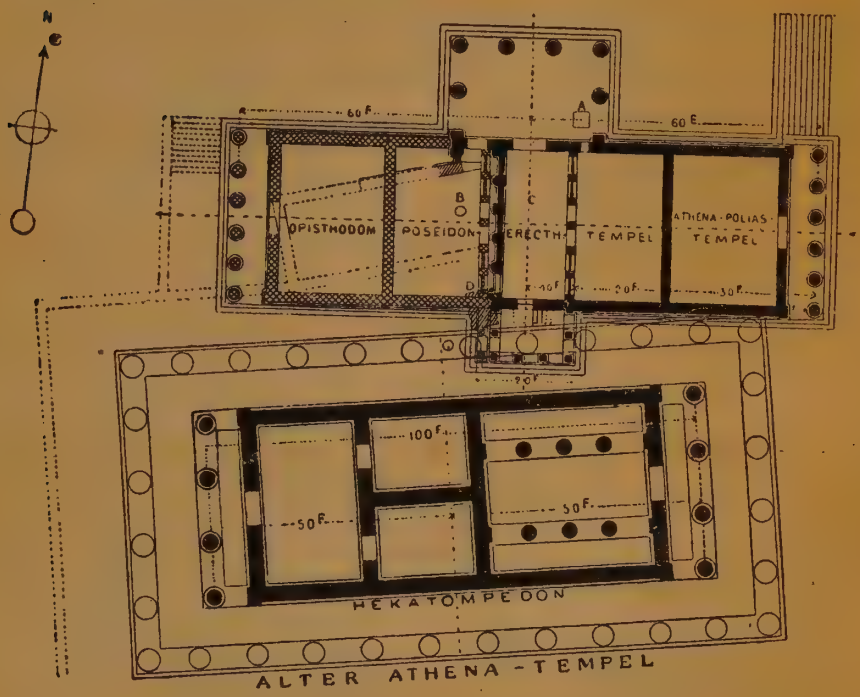

Figure 9. — Plan of the ancient Temple of Athena and projected Plan of the Erechtheum.

On all these stones are traces of fire. Over the 'poros' stone with which the Temple was built was a layer of wyite stucco, still visible in ceetain parts.

Several architectural members of the Temple, for instance the triglyphs and cornices were picked out wich

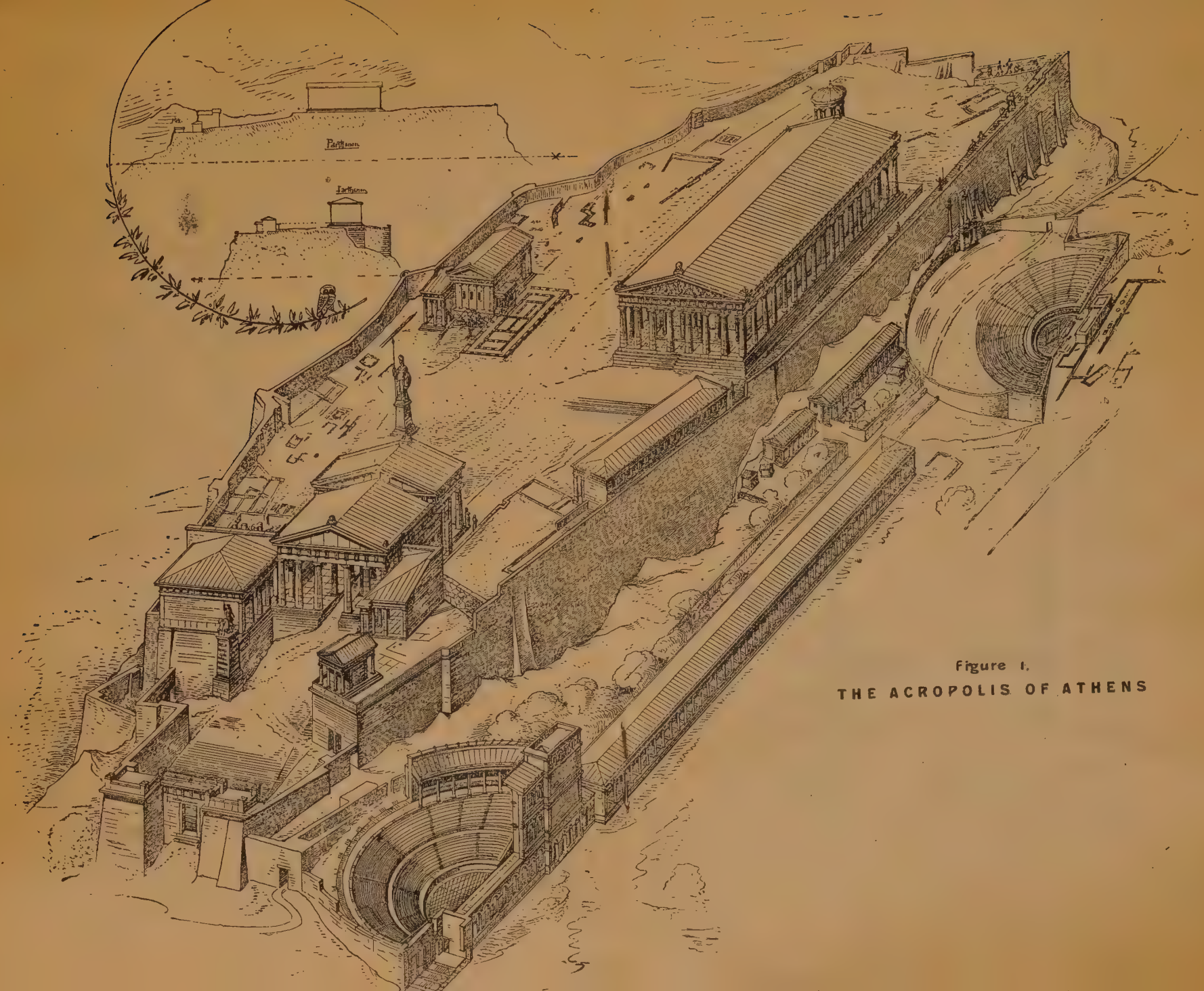

Figure 1.
THE ACROPOLIS OF ATHENS

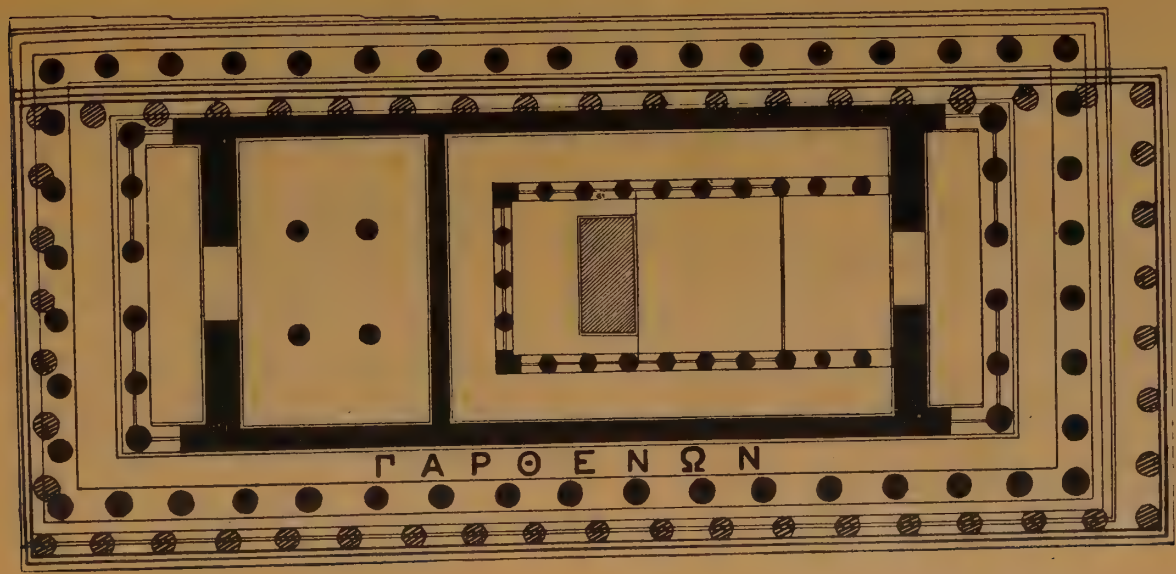

Figure 10. — Plan of Parthenon.

colour, especially with red or blue, while the 'poros' statues and reliefs were painted all over. The marble statues and architectural members were also partly couloured.

The Parthenon.

The Parthenon, which was built during the ascendance of Pericles (about 447-438 B. C.), is the most wonderful building of all antiquity. Standing in an elevated position it enhanced the brillance of the other buildings and the countless statues and offerings which stood around it on the Acropolis. An earlier temple of «poros» stone had been begun on this site probably shortly after 510 B. C.

After 490 B.C., when the Athenians had defeated the Persians at Marathon, the design was slightly altered and the construction of the new temple was begun in marble.

In 480 B. C. the Persians found it unfinished and destroyed it; the drums of the columns, which had been damaged by fire, were used again by the Athenians after 477 B. C. as material for the north wall of the Acropolis near the Erechtheum, where they are still to be seen, and Pericles entirely rebuilt the temple on a new plan. Figure 10 shows both the first and the third plans; figure 11 the temple as it is today; figure 12 its various sections. In figure 13 can also be seen the interval view of the temple and the position of the statue of Athena, the goddess to whom it was dedicated. This was the wonderful gold and ivory Athena of Pheidias; the statue which showed the goddess standing erect and reached up to the roof, rested on a marble base and was made of wood overlaid with plates of ivory and gold. A small

Figure 11. — A view of the Parthenon.

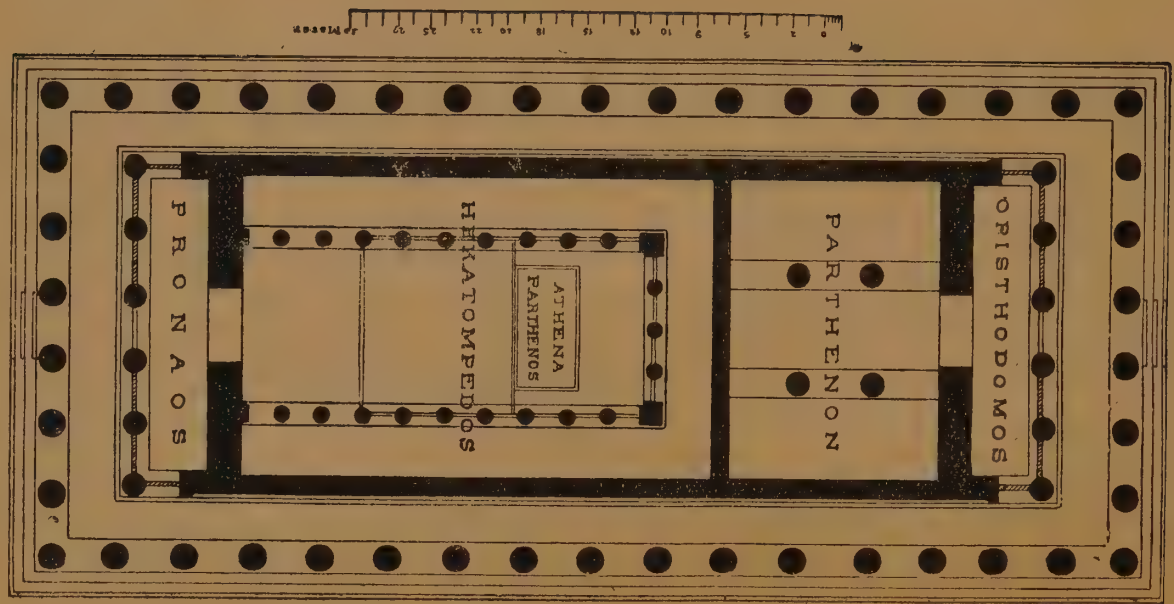

Figure 12. — Plan of the Parthenon of Pericles.

marble copy of it, an inferior work of Roman times, is in the National Museum. Figure 14 is a restoration of the Parthenon, and figure 15 shows a view of the restored corner from the east side. The *cella* alone was as long as the whole ancient Temple of Athena. The large hall behind the principal sanctuary i. e. the *cella* was called the Parthenon; in it were kept the temple-vessels and votive offerings to the goddess, and it was from this hall, that the whole temple took its name.

To the west of the large hall was a smaller room called the Opistodomos, corresponding to the Pronaos from the east side, and the space between the columns of both was railed in. Both the *cella* and the large western hall were lighted solely by their high and wide doors. There were no windows.

The *cella* was divided into three aisles. Four colums supported the roof of the large hall to the west. On the inner colonnade of the *cella* stood a row of smaller colums reaching to the roof.

The roof of the Parthenon was undoubtedly wooden and was covered with marble tiles. The ceiling ef the outer colonnade («Peristasis» or «Pteron») was of marble. In the three steps leading to the entrances of the temple, at the east and west ends, were other smaller steps.

The space around the temple was certainly levelled up to the steps and perhaps also paved.

Above thc architraves many metopes are to be seen, but they have been much damaged by time and the Turks. Such as remained intact in Lord Elgin's day are now in the British Museum, as are also the sculptures which adorned the eastern and western gables. In the eastern gable was a representation of the birth of

Figure 13. — The cella of the Parthenon.

Figure 14. — The Parthenon restored.

Athena and in the wertern the strife between Athena and Poseidon for the possession of Attica. The interior of the colonnade of the temple was decorated by a frieze, representing the pocession of the Panathenaea, or great festival of the goddess. The frieze is only preserved in its original position on the western side were one can distinguish the horses being prepared for the festival. The other slabs of the frieze are in the British Museum, with the exeption of a few in the Acropolis Museum. On the north side of the Parthenon we can perceive that the horizontal lines of the steps are not quite level, but are slightly curved, rising perceptibly in the middle. The columns, too, are not quite perpendicular but all lean slightly inwards. The architect of the temple was Ictinus but the work was superintended by the great Pheidias, who also worked at the sculptures or at least drew the designs which were carried out by his pupils and assistants under his direction.

About 500 years after the birth of Christ the Parthenon became a Christian church, dedicated first to the Wisdom of God and afterwards to the Virgin. In 1456 the Turks converted it into a Mosque, and built a minaret in the north-west corner. Remains of Christian frescoes can be seen on the west and north walls. Outside the Temple on the north-east stood the great altar of Athena, on the place where the rock is nat levelled. The altar was no doubt of large size, and was perhaps adorned with a frieze. The most beautiful altar with a frieze (now in Berlin) was found in Pergamon in Asia Minor. Of the altar that stood in front of the Parthenon nothing now exists and it was very probably completely destroyed when the Parthenon was converted into a church.

Figure 15.½— The restored north-east corner of the Parthenon.

Figure 16. — The Temple of Roma.

A short distance from the east side of the Parthenon are the remains of a small round Temple of the goddess Roma built by the Romans. Fig. 16. To the west, and near the south wall of the Acropolis, stood the Chalcotheca or armoury.

To the south of the Parthenon, at the bottom of a pit, left open on purpose after the excavations of 1885-1890, remains of the ancient Pelasgian wall can be distinguished. Here can also be seen an ancient wall of 'poros' stone and in it a stairway. This wall was built when the foundations of the Parthenon were laid on the south side: the natural rock falls away at this point and the foundatious begin at a depth of 10 metres from the surface. The space between the foundations and the Pelasgian whll, and between it and the wall built by Cimon, was filled up with earth and thus the area of the Acropolis was enlarged.

On the west side of the Partenon the steps carved in the rock served as stands for inscribed columns.

The Erechtheum.

Fig. 9 shows the design for the Erechtheum as originally planned, but not carried out, in antiquity and its actual state. Fig. 17 a view from the Propylaea. Fig. 18 a section from east to west. Fig. 19 a restoration (east side). Fig. 20 a restoration (west side).

The idea of the Erectheum was originated by Pericles, but it was not built till 421 B.C. The work was interrupted after 415 and the building was not completed till about 408. It was devised to replace the ancient temple, the

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[1] See Figure 1 page 18.

Hecatompedon or old temple of Athena, and took over its dedication. The name Erechtheum is derived from Erectheus, one of the most ancient gods in Greek mythology, who shared the temple with Athena. He is said to have descended from heaven as lightning and to have entered the earth. Earth, as mother of the Universe, gave birth to Erechthonios; the latter was thus

Figure 17. — Aview of the Erechtheum.

the first man and ancestor of the Athenians, who were called Erechtheidae after him. The hole through which Erechtheus entered the Earth could be seen then as it is seen to day in the north Portico. In the roof above is an opening, as places where a thunderbolt was supposed to have fallen were customarily left uncovered.

Later on Erechtheus was identified with Poseidon, and the cleft in the rock was shown as the spot struck by the

trident of Poseidon. From this spot a spring of salt water was said to have welled up and this was shown on the side of the mediaeval reservoir seen from the north door.

Outside the Erechtheum to the west was the small temple of Pandrossos, a form of Mother-Earth. Within the enclosure of this little temple was the sacred olive-tree produced by Athena in her contest with Poseidon; by this precious gift she vindicated her claim tc the possession of the city.

Looking at the temple from the east we can just distinguish traces of a christian church.

Fig. 18 shows the interior of the temple as it was in

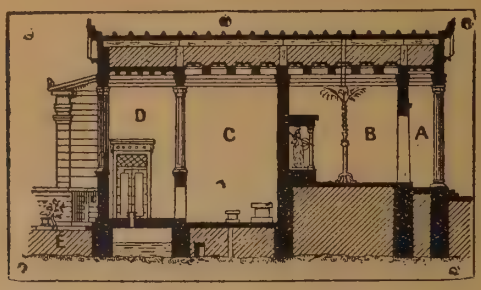

Figure 18. — The interior of the Erechtheum.

antiquity. At the east end, where the floor-level was much higher than in the rest of the building, was the sanctuary of Athena with her ancient wooden image, the Palladion. This sanctuary had a door and two windows to ths east.

The lower western portion of the building contained the sanctuary of Erechtheus-Poseidon divided in two compartments. It was entered by the north portico and door. The mediaeval cistern, which in ancient times contained the « Sea of Poseidon » was covered with

Figure 19. — The Erechtheum restaured (East side).

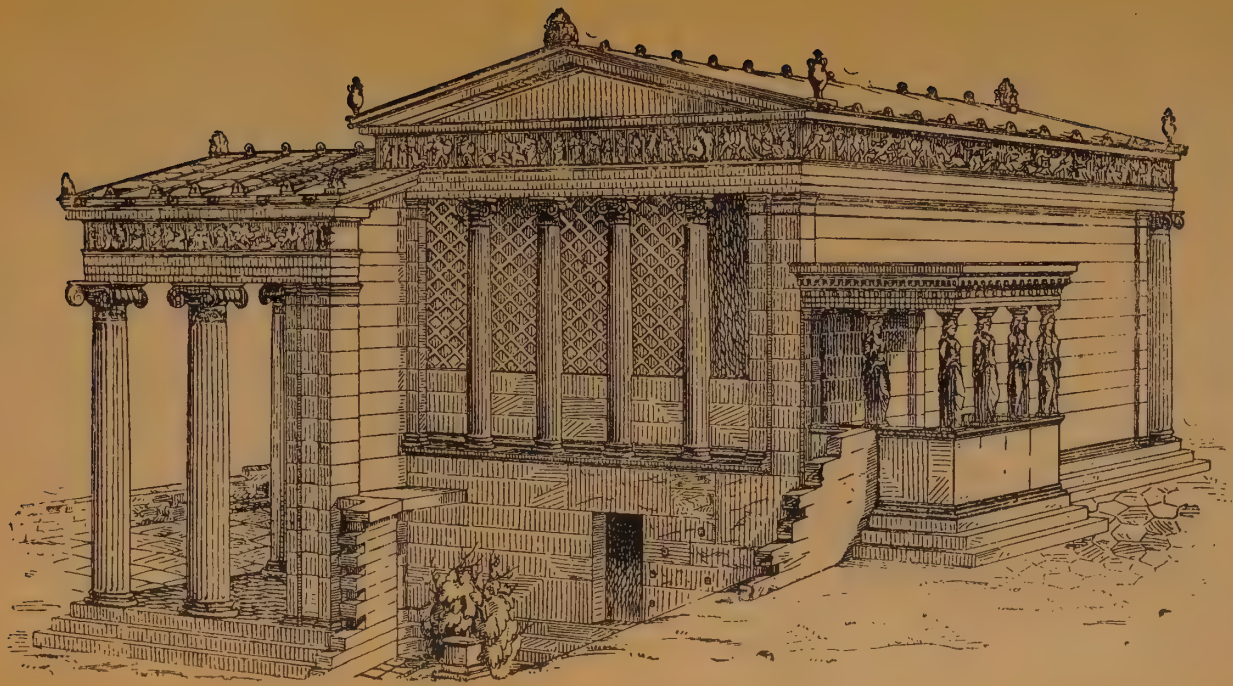

Figure 20. — The Erechtheum restored (West side).

flagstones and communicated with the temple by a well head. The west front of the Erechteum had windows with wooden railings; under the Romans some modifications were made in the original desing of this portion.

The southern balcony with the six female figures—one, now in the British Museum, is replaced by a plaster copy—is generally known as the Porch of the Caryatids, but the figures were by the ancients simply designated the «Maidens». The baskets on their heads recall those borne by the girls of Atheds represented in the frieze of the Parthenon as carrying sacrificial offerings at the Panathenaic procession, and it was these Maidens that the artist intended to represent. Beneath this porch was the tomb of Cecrops, the first king of Athens. The style of the Erechtheum is Ionic: the richness and grace of its oder form a worthy counterpart to ths austere and noble Doric of the Parthenon. The colums are slender and graceful while the richly carved capitals and the details of the epistyle were enhanced with painting. The frieze of blue stone had attached to it a series of small figures in white marble representing a festal procession in honour of Athena. The details of the north portico nnd doorway — a perfect example of a classical entrance —are very sumptuous, while the maidens of the southern porch are incomparable sculptures of the finest period of Greek art. Their pose of easy dignity renders them almost lifelike, and they seem hardly to feel the burden they support.

East of the Erechtheum can be seen a stair leading up from a small gateway in the north wall to the prehistoric palace. Of this building two bases of *poros* stone (enclosed by iron railings) are preserved on the site of the old

temple of Athena: they originally {supported colums of wood. West of the Erechtheum are two other stairways in the north wall; one of these is very ancient; the fragmentary steps of the other date from the mediaeval or Turkish period. To the west of the Erechtheum are to be seen some prehistoric walls belonging to the Mycenaean palace and other Mycenaean buildings which once stood on the Acropolis. Close to the wall are other ruins which form part of a portico and other unidentified buildings dating from the classical period. Lower down are some ancient cisterns not far from the projecded north hall of the propylaea. Here, in the sixth century B.C., it is possible that the palace of Peisistratus stood. witnin the area of the projected hall of the propylaea are the remains of a Frankish church. Below the north western wall of the Acropolis are the caves dedicated to the worships of Appolo and Pan. The adjoining cliffs of the Acropolis were known in antiquity as the Long Rocks. The slope below is described by ancient authors as covered with rich green grass and flowers.

Athens, Printing Office «Hestia» — 7314.

Athens to Corinth

On this trip I saw along the road many olive groves with oats and especially wheat growing underneath. Some of these olive trees are very old.They are each numbered--people own trees rather than land.

Figure 114. A farm near the village of Megagara (Olives and wheat).

The land suitable for agricultural use is mostly a rather narrow strip along the coast. The soil is largely of the Terra Rossa group, from limestone, either residual or on the terraces. Most of the land is made up of a very complicated pattern of terraces, fans, and cones. Some of it is very gravelly and stony.

After crossing the Isthmus we came upon larger terraces, partly of marine origin in the lower part. Here there are

Figure 115. Currant grapes near Corinth

many excellent currant-grape vineyards, carefully tilled and sprayed. Many of these give the appearance of being in small patches, primarily for water control. Also olives, wheat,

Figure 116. Mixing spray for the currant grapes.

oats, and onions are grown and I saw one small patch of tobacco. Old Corinth has been covered by alluvial debris from the mountains of olive or olive-brown color, not red. Near the sea were some Solonchak soils but I saw no Solonetz. On this trip I saw no Rendzina.

Figure 117. A modern St. Paul in the Temple of Apollo; but where are the Corinthians?

Figure 118. Excavations at Old Corinth.

Figure 119. View of old Corinth from the hill near the Temple of Apollo.

Figure 120. Famous spring in old Corinth, and center of elaborate water works.

Athens to Salonika

As the train left Athens we passed between high, dry, stony, nearly barren hills on a rolling plain. Up to about Marathon this plain was gravelly outwash with red soils that

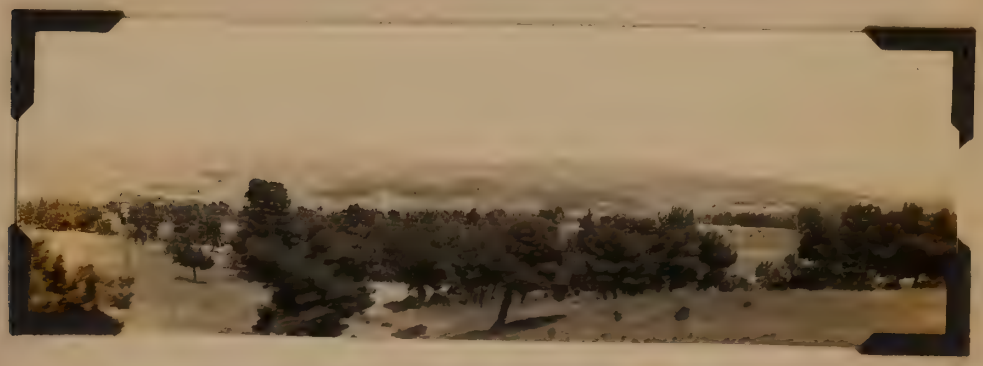

Figure 121. Marathon from the train.

appeared to be very droughty. They were not used for crops but supported a medium stand of scrubby pine. Beyond, we saw red and grayish-brown soils from residual materials with grapes and grains.

Near Malakasso I saw deep red Terra Rossa soils on an old cherty limestone peneplain. Beyond we entered a broad rolling

Figure 122. Hauling oats near ΥΠΤΑΟΝ

plain of grayish-brown soil, dry, with scattered olives and pines used for naval stores. There were scattered fields of poor wheat and oats. Much of the land, in small patches, seems not to be used, and other fields appear to be in fallow. There is an almost complete absence of forage crops, if one excepts the few oats that are cut green. But not all of the oats are cut for hay; some are harvested for the grain. Here, as

Figure 123. A little village with Mt. Parnassus in the background. (From train)

elsewhere in Greece, the best crops are on the lower lying terraces and alluvial soils, some of which are quite red while others are grayish brown. As in other parts previously visited in Greece, there are essentially no houses on the land--all are in the villages.

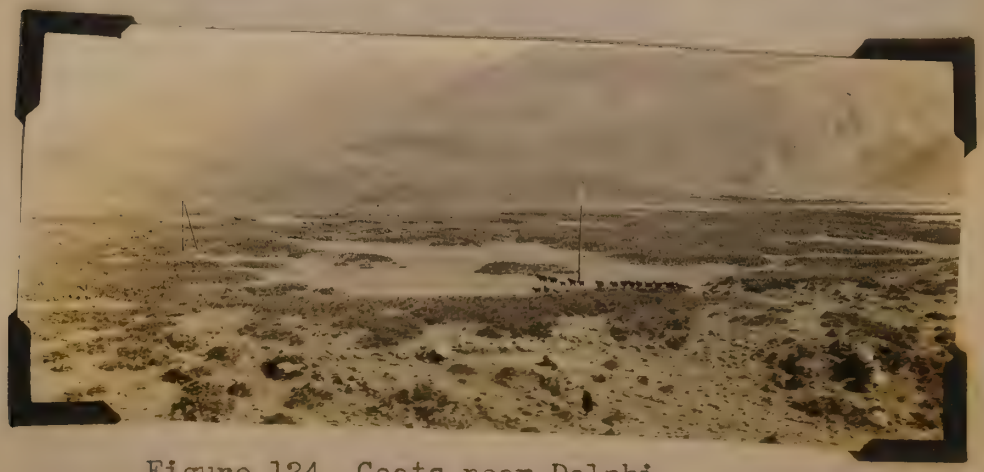

Figure 124. Goats near Delphi.

The sheaves of grain are collected in small rectangular piles, not stacks, and flailed. At one village, yesterday, however, I saw a small threshing machine. Sometimes the grain collections are made at the village in one large place. The bundles are carried in on the backs of donkeys, small horses, or in carts. I saw a few 2-horse, 4-wheel wagons not unlike those in the most rural sections of America.

Just before coming to Uptoon I saw some cotton and beyond considerable cotton. The fields are larger and the equipment just a little better. This plain is a part of the same reclaimed lake passed on the road to Delphi.

Just south of Thermopylae junction there is a flat coastal area, filled in by clayey alluvium. The soil is poorly drained

Figure 125. A farm house near Thermopylae.

grayish brown in color and the crops are not above fair. South of this we passed through a very hilly (and very pretty) country. Here there were some cows and patches of tobacco, alfalfa, and corn were numerous. The area appears to be better watered.

Figure 126. View north of Thermopylae.

Figure 127. Mountain view near Thermopylae.

South of Larissa about 30 to 40 miles we entered a great lake plain. Much of the soil is very heavy, dark, and has a faint micro-relief. This soil is very similar to the light phase of McKenzie clay. The green oats being cut for hay were short and thin. This soil will need drainage and very careful tillage to become productive . Much of the land is devoted to native hay. In the plain there are broad, low, winding terraces that are more brown in color and more suitable for crops. Cotton is grown on these soils.

All along the route there were shepherds with small flocks of sheep or goats.

Figure 128. A shepherd near Larissa.

Environs of Thessalonica

The rocks, relief, vegetation, and soils are quite complicated in small areas. The dominant soils are Terra Rossa from limestone. In addition there are other soils developed from slates, shales, gabbro, schists, etc. These are more brownish in color and are like Brown Forest soils (Ramann). Only the soils from limestone, or those developed upon terraces or first bottoms, the materials of which come from limestone, have much red color. There are areas of medium gray and very dark gray Rendzinas scattered about. These were likely grassy areas in a region of forest. Likely the Brown Forest had a fairly heavy mixed forest originally and the Terra Rossa a scrubby pine forest. These soils gradually merge into the Terra Rossas and the Brown Forest soils. On the smooth relief the soils on the limestone are less red, more yellowish-brown, and have a compact B horizon. The deeper C is mottled and quite plastic, and when dry resembles conglomerate (Planosol phase of Terra Rossa).

In places there is severe, unchecked erosion, especially gullies cut into the old terraces where the water from the little hills has been concentrated. The upland soils are not especially erosive and a little care would go a long way to prevent it.

Near the coast I saw heavy alluvial soils, resembling Wiesenboden. There were some salty soils but there was no time to examine them carefully. There are both Solonchak and Solonetz soils.

I collected a sample of Terra Rossa from a field about 5 km. north of the American Farm School at Thessalonica, Greece, near Anatolia College. The sample was collected on a smooth, B slope that had been farmed for many years. (See Figure 129). The land had a thin stand of weeds; peas had been

Figure 129. Grapes on Terra Rossa near Thessalonica.

harvested the previous month. Nearby soil of the same kind had okra, wheat, broad beans, and grapes. The soil effervesces with dilute acid on the surface and throughout the solum. (Textures approximate only and need to be checked in laboratory.)

Horizons.

1. 0-8" Brownish-red sandy clay loam. Dry. Relatively easily friable to medium hard, rather large crumb. Plowed portion.

2. 0-16" Somewhat compact, slightly darker than above, dark reddish brown. Slightly vesicular. The soil digs out in small pieces that are rather easily friable to irregular, small, subangular nut. In turn, these are rather easily friable to large rubbery crumbs. White streaks of $CaCO_3$, resembling mycelia. Some glossiness on the natural structural aggregates.

3. 16-30" As above but with considerably more white mottling and streaks. Irregular, subangular, small nut, slightly larger than above. Quite compact in place.

4. 30-38" (?) Slightly more yellowish than above and somewhat more compact.

5. Rock Sample of limestone from nearby pit. (I'm not real sure of this rock; it may be too soft).

There are quartzite pebbles up to 2" in the soil and especially on the surface. There were some small concretions of $CaCO_3$.

Figure 130. A view near the American Farm School

In this area there is a great deal of settlement of refugees. Some were placed in new villages and some into old, established villages. There were about 1,400,000 or about 250,000 families of which about 180,000 went on the land. The cost per family was about $450 as contrasted to $3,500 in Palestine.

At the American Farm School I saw the graudation exercises. The graduates were dressed in overalls and demonstrated the use of agricultural machinery, exhibited the livestock, etc.

Figure 131. Graduating class at American Farm School at Thessalonica.

Figure 132. A student exhibit at the American Farm School.

Figure 133. The graduates demonstrate the use of an American combine.

Figure 134. They go by the reviewing stand.

Figure 135. The graduates

Figure 136. Ready to begin. The reviewing stand in the left background

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THE THESSALONICA AGRICULTRAL AND INDUSTRIAL INSTITUTE

THESSALONICA, GREECE


THE · THESSALONICA · AGRICULTURAL · AND · INDUSTRIAL · INSTITUTE
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THESSALONICA AGRICULTURAL AND INDUSTRIAL INSTITUTE

(American Farm School)

A

REPORT

COVERING THE YEARS

1922 — 1937

Gambusia fish which live on the larvae of mosquitoes, are being distributed by the School on malarial breeding pools and marshes.

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Executive Secretary

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*Miss Ruth E. House ..... Bible
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*On Furlough

THESSALONICA AGRICULTURAL AND INDUSTRIAL INSTITUTE

(American Farm School)

THE last printed report of the Thessalonica Agricultural and Industrial Institute was issued in 1921. The events and problems of those next few years made it seem unwise to take the time or the money for another. The Trustees believe that the time has now come when it is only right to give to the widely scattered friends and supporters of the School, a more comprehensive description of the work and acquaint them with its present financial status. It may be well to state, however, that an annual bulletin is published in Greek, descriptive of the curriculum and purpose of the School, as well as the terms of admission.

In 1904 when the American Farm School was started, no one could have possibly foreseen that in 1922 hordes of refugees would be thrust on the surrounding territory. By that time the School had been struggling with the problems of that dry, arid soil for twenty years. One can readily understand what it meant to these discouraged wanderers to find that with intelligent planning and application, land no better than that on which they had settled could be fruitful.

1500 villages sprang up in that part of Greece where the American Farm School is located. With the help of the Greek Government, the hearty approval of the Greek Church, and the well-trained students and graduates, it exerts a vital, constructive force in these rural communities.

THE INTERVENING FIFTEEN YEARS

1922-1937

With the conclusion of the Treaty of Versailles the glamor and tragedy of war ceased to occupy the minds of most people, but for Greece it was not so. It was not until after the tragic disaster of the Fall of 1922 that the Greek people were forced to drop the problems of war and immediately face their great refugee problem.

It was just at the time when we were preparing material for our annual report that the flood of refugees from Asia Minor burst into the daily life of everyone in Greece. The annual report was set aside and forgotten, and circumstances from that day to this have held off the consideration of the publication of such a report.

What it has meant to Greece to have to absorb into her territory nearly a million and a half Greeks from Asia Minor does not have a place in this report, for we would have to stray far from the activities of the American Farm School. But the question which does belong here is what effect this overwhelming event in the Near East has had on the American Farm School. Looking back over this second half of the School's history, it seems to us that the effect has been to identify the School with the life of the people and to adapt its program to the needs of the generation. But it would be too bad to drop these intervening years since our last report with this general statement, for there is so much that is a vital part of the School that has its origin in this period.

Human nature always seems to rise to a degree of sublimity when it gives place to its feelings of sympathy, mercy and pity. The intricate and often irksome systems of organization which characterize so much of human cooperation, are replaced by a spontaneity and unity of action and purpose which bridges gaps of class, creed, and conflicting interests. So it was to a remarkable extent in Greece in 1922.

The School thus found itself quite naturally a part of the events when a United States destroyer, bringing orphans into Thessalonica, left twenty-two at the School. As groups of refugees were settled in nearby villages, it was also quite natural that groups of students and teachers should give of their humble services to the relief of sickness, and that these activities should have established relationships with those similarly occupied.

It was at this time that the Society of Friends came into contact with Mr. Bertholf, who was then on our staff; with the result that for many years a Friends Centre was located at the School, and the establishment of a Friends Scholarship Fund resulted in 1926. So it was that members of the staff came into contact with the official colonization agencies, with the result that later the man directing the settlement of the refugees became a member of the Board of Trustees of the School.

The period of emergency inevitably became a period of adjustment in the life of Greece, and into this period the School entered with a wider knowledge of the problems and the character of the people it was its purpose to serve. The School itself was recognized as an agency which could, and would, contribute to the period of adjustment which the rural communities had to face. This found official expression in a contract with the Government for the education each year of a certain number of students; to be followed by the provision by law of land allotments to its graduates; and lastly, to the appointment of many of its graduates as community advisers. To the School this has meant expansion of plant and staff, organization of activities, and maturity of outlook.

In the fifteen years, 313 young men have gone out from the School. They are scattered over the country in as many as 115 towns and villages in Greece, and in 15 different countries throughout the world. Each year is bringing to these graduates new responsibilities and wider experiences, and it is under this crucial test of its influence, the School is winning its most important battle.

Of the 25 who have been granted land by the Government this year, nearly all of them have been back from one to a dozen times for help in some phase of their problems. The Society of Friends have continued their interest in their scholarship boys by making small loans to some of those who have graduated and are getting established on their own farms. This is proving a real asset to us in our relations with these boys.

From the list of our graduates, 46 are cultivating their own farms; 73 are farming land that belongs to their families or relatives; 28 are in Government agricultural services; 37 are teaching in agricultural schools or experiment stations; while only 52 are in business or industrial activities. Forty of the graduates have gone on to higher educational institutions.

As this report is published, the clouds of doubt and uncertainty are again settling down over a large area of the world. There are few people who can look with any degree of certainty into the future. However, this has characterized the history of the School from its beginnings, but in spite of that — and perhaps because of it — the School has grown and its value has been recognized.

A Graduate's Home

REPORT OF THE DIRECTOR

1936-1937

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After an absence of six months in the United States, I returned to the School at the beginning of a new fiscal year. During this time the School had lost the Founder, and the man who had served as acting-director in my absence. It was, therefore, natural that in returning to the School I should be conscious of the necessity of facing a new and unfamiliar situation with many feelings of sadness and uncertainty.

My wife was appointed acting-director until my return, and it was a great satisfaction to hear from Mr. Zannas, one of our Greek Trustees, that during this trying period the entire staff had demonstrated their fitness and sense of responsibility, and had clearly proven the stability of the Institution.

One of the special efforts of the present Government is to stimulate education, and especially practical training such as we are giving. As evidence of increased interest in our School, we cite the following visitors: His Royal Highness, Crown Prince Paul, accompanied by his aide-de-camp, and Admiral Sakellarious, the Commander of the Greek Navy. Also His Excellency, the Minister of Agriculture, accompanied by his technical advisor; Mr. Tsonderos, the Governor of the Greek Bank, and many others in important positions.

Prince Paul arrived quite unexpectedly one day soon after the beginning of the new school year. He showed real interest, examined everything very thoroughly, and was especially beguiled with the little pigs and the dairy. The cows were all peacefully chewing their cuds and as he walked down between the long rows, stroking their noses, they in turn licked his coat sleeve. He, and the others with him, were also much interested in the spotlessly clean milk room. He saw the dormitories, visited the hen houses where he watched the way the trap nests work, walked behind the horses in the stalls, and into the electric light station. After his tour of inspection he remained to hear about the purposes of the School.

Our herd of Guernseys

The beguiling pigs

Mr. Craig Smith, a member of the Board of Trustees, with Mr. Peter Van Brunt of New York, spent "two overfull days" at the School. Other visitors were Mrs. Edward H. Williams, of Woodstock, Vermont; Walter Reed and Peter Hazard, students at St. Paul's School; Henry Reed, student at Harvard; Sam Howard, student at George School, Pa., and Dr. Kagawa of Japan.

Mr. Paul Morgan, of Worcester, Mass., came in April. He was particularly interested in our plan to make use of the industrial shops during the summer months by giving short courses in mechanical and engineering trades to graduates and older boys in the villages not eligible to the regular courses. Dr. Clarence MacCartney, of the First Presbyterian Church in Pittsburgh, made a second visit to the School. We then travelled together to Chios to give help and encouragement to a school which is being started there similar to our own.

Mr. S. W. Gentle-Cackett, of the Bible Lands Missions Aid Society, came from England bringing valuable gifts of seeds and registered eggs. Mr. and Mrs. Douglas Maynard, delegates from the Society of Friends in England, spent ten days at the School and in the various villages where the Friends Scholarship boys live. A monk from Mt. Athos came to get help in tree grafting, and the Governor General of Macedonia came to preside at the annual Tree Planting Day.

We enrolled 120 students in September, and in October welcomed to our school family, Mr. and Mrs. George Gardner, and their young son John. Mr. Gardner is a graduate of Princeton, class of 1931, and Mrs. Gardner is a daughter of Professor and Mrs. Henry Norris Russell of Princeton.

The Dairy Department has had considerable increase in stock through the purchase of cows from Jugoslavia and the contribution of five Guernseys from the United States. We have a fine herd of young stock born this year, three of which are pure blooded Guernseys. The following list of Farm and Live Stock Products shows the extent and volume of production for the fiscal year ending August 31, 1937:

Dairy Department	$7,973.75
Poultry Department	859.00
Pig Department	1,918.70
Sheep Department	471.80
Farm Fields Department	6,355.20
Horse & Wagon Department	1,380.80
	$18,959.25

The Industrial Departments play no less important part in the program and productive effort of the School enterprise; however, their activities are so varied and detailed that it would be impossible to make up a table which could be used in a report like this. It may serve to indicate the extent of some of the departments to state that the Water Supply Department pumped about 6,000,000 gallons of water, and the Power Station produced about 40,000 K.W.H. of electric energy for the various departments of the School.

The graduating class of 1937, which numbered 24, brings the total number of graduates to 313. Two years ago the Alumni Association was organized and voted to meet every two years. 116 graduates returned for the first meeting and 85 for the second, which was held the first week in September to coincide with the International Fair of Thessalonica, so that reduced fares would enable a larger number to attend.

I would like to mention some of the various ways in which the School is entering into the life of the Greek people. Through our membership in the Royal Agricultural Society, we keep in touch with national agriculture, and through the Rotary Club, with business, industrial and social movements in this part of Greece.

As a member of the Board of Directors of the Patriotic League, a semi-official national philanthropic organization, we keep in touch with the social efforts of the Greek people and render very much appreciated assistance through our technical staff. Our interest in the welfare of the needy is evidenced through the Managing Committee of the Soup Kitchens in Thessalonica. This Committee operates a central kitchen and distributes about 6,000 meals a day, at an approximate cost of five cents a meal, of which three cents is contributed by the city and state and two cents by the consumer.

As a member of the Governing Board of the Touring Club of Greece, we can help in the development of roads and especially in cheaper methods of maintaining and repairing roads.

As inspector of the Meteorological Station of Thessalonica, with Mr. Bodouroglou of our staff as director and observer, we have been able to integrate definitely our records as part of the national weather bureau.

Mr. Litsas, of our staff, is Scout Commissioner for Macedonia and Thrace; Mr. Andreades is regularly giving his time as editor of the official church magazine of this Diocese of the Orthodox Church; Mr. Lagoudakis is promoting the Society for the Prevention of Cruelty to Animals; and Mr. Doolas keeps up the friendly relationships between our School and the University. Mr. Starche, Mr. Hadjis, and other staff members, give generously of their services.

A recent Government circular requested that the boys attend church every Sunday. In compliance with this request, we have fitted up a chapel on the top floor of Princeton Hall, where services are held every Sunday morning. A special ritual has been printed which has the approval of

the church and is also suitable for the needs of the School. A choir leader comes once a week to help the boys with the music. On Sunday, November 21, the little chapel was dedicated by the Bishop, and he gave it the name of St. John Chrysostomou (John of the Golden Tongue). A committee of boys has been chosen to help plan the Sunday evening services. This committee has incorporated some of the vital questions that have been formulated by an orthodox Youth Study Group under the auspices of the Y.M.C.A. and with the help of Dr. John R. Mott and Mr. Dri Davis.

In looking ahead, two important activities are awaiting development: First, a more adequate follow-up of our graduates, with systematic guidance in the planning and carrying out of their farming enterprises. Second, the opening of the long awaited girls department which would plan its curriculum around a typical village home equipped with such improvements as are within the reach of a family who are intelligent and ingenious in the use of available resources. Courses in cooking, sewing, weaving, hygiene, sanitation, the care and feeding of children, gardening, and the care of livestock, would train girls for and not away from village life.

Respectfully submitted,

CHARLES L. HOUSE

TREASURER'S STATEMENT

A treasurer has the advantage of a position from which he can watch the increase of interest as money receipts climb. Remarkable among schools, the Farm School at Thessalonica provides 75 percent of its running cost on the ground, either from the operation of its departments or from receipts at the School.

During the period since the last printed report our New York office has changed the picture from a deficit to the surprising balance over expenses in 1937 of $7,935.85 toward the 25 percent to be raised in the United States. This is reflected in the favorable combined financial statement for the New York office and the School, enclosed herewith. It is all delightful evidence of the response of the public to the information about the School, whether presented in Thessalonica or by our Executive Secretary, Mrs. Ethel House Bliss.

We are proud that we had the courage to draw upon our reserves to keep the School growing during lean years, and we are happy that our current receipts are sufficient to meet our current expenses. We are hoping to build up again reserves which may enable us to meet any emergency the future has for us

It is my happy privilege as treasurer to acknowledge the splendid and generous services of Mr. Frank J. Gillespie, who has carried all the burdens of bookkeeping, and of Miss Elsa Becker, our office secretary, whose service in accuracy and devotion to detail can only spring from the heart.

L. HOLLINGSWORTH WOOD

Treasurer

Students — 125

Represent 80 communities.

Admitted on the completion of the 6th year in school.

All pay for board and room except those receiving scholarships from the Government or through the Society of Friends in England.

Every student receives theoretical and practical instruction, and must go through each practical department twice during the four year course.

Graduates — 313

Represent 115 communities.

The graduates are eligible to buy reclaimed Government land on long term basis.

They are prepared for every type of agricultural enterprise, and its industrial accompaniments.

They have been made fully conscious of the difficult problems of farming on new or arid land.

They are inspired to love and to help raise the level of village life.

SCHOOL PLANT

Since 1921 the School has more than doubled its number of students and the number of buildings. The building of the Dairy Barn is now complete with the addition of the milk room and the new cheese room.

Princeton Hall houses the kitchen, dining room and play room in the basement; the assembly room on the main floor; the dormitories and instructors' rooms on the second floor; and on the top floor the little new chapel.

Sherrill Memorial Quadrangle (above) given in memory of Howard W. Sherrill by his mother, wife, sister, and Princeton classmates of 1909, houses the carpenter, machine, blacksmith, plumbing and painting shops; offices, feed mill, battery room, power house, electric wiring shop and storage space.

There are ten new staff cottages, the infirmary, and green house. A combination swimming pool and reservoir, made possible by a gift from Mrs. John H. Finley, irrigates a two-acre garden which provides vegetables for the entire school family.

SPECIAL NEEDS

Increase in current income	$5,000.00
Machinery for Agricultural Department	2,000.00
Machinery for Industrial Department	2,000.00
Furnishing and maintenance of chapel	1,000.00
Finishing two staff cottages	1,000.00
5 Poultry houses @ $50.00 each	250.00
Flooring for Library and reading room	200.00
Chairs, @ $1.00 each	50.00
A second bull	
Cows	

Contributions for special needs or for current expenses may be sent to the New York office of the American Farm School, 17 East 42nd Street, New York. In Great Britain, the Bible Lands Missions Aid Society has kindly consented to receive contributions for the School. These may be sent to the Rev. S. W. Gentle-Cackett, 9 Tufton Street, Westminster, London, S.W.1, England.

At Verria, about 60 miles from Thessalonica, the School has a thirty-acre demonstration farm.

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Hardie Estate Sprayer, from the Hardie Manufacturing Company, Detroit, Michigan.

Two pens of chickens (Rhode Island Reds and White Leghorns), from Mr. Edward C. Lord, Mass.

A bust of Dr. John Henry House, donated by the sculptor, Mr. Agop M. Agopoff, New York City.

One revolution counter, from Mr. Sanford S. Smith of East Orange, New Jersey.

Books for the Library from Mrs. Edwin P. Farnham of Great Neck, New York, and Miss Mary L. Matthews of Lancaster, Wisconsin.

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a bull from Mr. Oscar Kinney, New York

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Eggs, seed and livestock from the Bible Lands Missions Aid Society, England.

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I give and bequeath to the Thessalonica Agricultural and Industrial Institute (corporate name of the American Farm School) incorporated in 1904 under the laws of New York State, the sum of

.....dollars.

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Founder of the Thessalonica Agricultural and

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Director from 1906 to 1927

President Emeritus, 1927 to 1936

On Sunday morning, April 19, 1936, just as the bells were ringing for chapel services, Dr. House passed from the earthly life. On the beautiful white marble stone in the Memorial Grove at the School, are these words inscribed:

"An Adoring Servant of God,
A Faithful Apostle of Christ,
A Practical Friend of Man."

At the services held on April 20th, these words were spoken by the Metropolitan of Thessalonica:

"And now venerated Dr. House, rest in the bosom of thy Lord. Thou hast been faithful unto death; thou has lived the life of benefactors. Thou succeeded in having the respect and love of the society and all of those who have known thee here and in the United States of America. Rest thou in the peace of thy Lord.

We and our country will always remember thy name with gratitude, and thy memory will last forever."

The Trustees also wish to pay tribute to Dr. Kenyon L. Butterfield, a trustee of the School from 1921 to 1935. He advocated "adequate civilization for those who till the soil and live in rural environment". His interest in country life extended to all lands, and he was deeply interested in the work of the American Farm School in Thessalonica, Greece.

* * *

On May 20, 1936, the School lost another valuable and devoted friend in John Henry House, Jr. He made the architectural drawings for most of the buildings as well as the plans for the grounds, and to him the School is indebted for their simple charm. He not only gave his professional services but also served the School in many other ways.

* * *

On May 27, 1936, the School lost one of its ablest and most devoted teachers in Mr. Demeter Georgiades. Mr. Georgiades was secretary of the School and acting-director for February 15 until his death. In a report to the Trustees only a few weeks before his death, Mr. House spoke these words: "In the field of administration my task has been inestimably facilitated through the services of Mr. Georgiades. His ability and his appreciation of what the School is trying to do assures me that its objectives would always be as zealously guarded as if I were there myself."

* * *

The death of Mr. Antonios Moser occurred in May, 1937. He was a teacher of Farm Management and a lecturer on various agricultural subjects. Mr. Moser was at one time the director of the Greek Experimental Farm about two miles away, and was at all times a sympathetic friend of the School.

* * *

On February 12, 1938, the Rev. Irving W. Metcalf died at his home in Oberlin, Ohio. He was a friend and trustee of the American Farm School from its beginning. His help in 1902 made possible the purchase of the first fifty acres of land. Since that time Mr. Metcalf has been untiring in his loyal and devoted services to the School.

ΑΜΕΡΙΚΑΝΙΚΗ ΓΕΩΡΓΙΚΗ ΚΑΙ ΒΙΟΜΗΧΑΝΙΚΗ ΣΧΟΛΗ

ΕΝ ΘΕΣΣΑΛΟΝΙΚΗ

ΠΡΟΓΡΑΜΜΑ

ΠΡΑΚΤΙΚΩΝ ΕΠΙΔΕΙΞΕΩΝ

ΥΠΟ ΤΩΝ

ΤΕΛΕΙΟΦΟΙΤΩΝ

ΤΗ 11 ΙΟΥΝΙΟΥ 1938

THE THESSALONICA AGRICULTURAL AND INDUSTRIAL INSTITUTE

PROGRAM

ANNUAL DEMONSTRATION OF FARM ENTERPRISES

JUNE 11, 1938

Τύποις "ΦΟΙΝΙΚΟΣ,, Βασ. Κων)τίνου 60-Θεσ)νίκη

ΠΡΟΓΡΑΜΜΑ

Ἔναρξις ἐπιδείξεων ὥρα 5:00 μ. μ.

ΠΡΟΣΕΥΧΗ

ΠΡΟΣΦΩΝΗΣΕΙΣ

Ἑλληνιστὶ: Δημήτριος Ἀγαπητὸς

Ἀγγλιστὶ: Ἰωάννης Χρηστίδης

ΕΠΙΔΕΙΞΙΣ ΖΩΩΝ

Παρουσίασις τῶν τελειοφοίτων ὑπὸ τοῦ Διευθυντοῦ τῆς Σχολῆς.

ΣΧΟΛΙΚΟΣ ΥΜΝΟΣ

ΕΘΝΙΚΟΣ ΥΜΝΟΣ

ΓΕΩΡΓΙΚΑΙ ΕΡΓΑΣΙΑΙ

1.	Θερισμὸς καὶ ἅλωνισμὸς	Ὑπὸ 4 τελειοφοίτων
2.	Θερισμὸς καὶ δεματοποίησις	Α. Ζωγκούδης - Κ. Βλάχος
3.	Συλλογὴ ἀχύρου δι' ἀχυροσυλλέκτου	Κ. Ριζόπουλος
4.	Φόρτωσις ἀχύρου δι' ἀχυροφορτωτοῦ	Ὑπὸ 3 τελειοφοίτων
5.	Δεματοποίησις ἀχύρου	Ὑπὸ 4 τελειοφοίτων
6.	Σπορὰ σιτηρῶν διὰ χειρὸς	Ε. Δόβας
7.	Κόπρισμα ἀγροῦ	Δ. Πολυχρόνης
8.	Ὄργωμα δι' ἑλκυστῆρος	Σ. Κατρακάζος
9.	Ὄργωμα δι' ἵππων	Σ. Παντελᾶκος
10.	Σκάλισμα δι' ἱπποσκαλιστηρίου	Κ. Μακρῆς
11.	Σκάλισμα ἀραβοσίτου	Ι. Ρουσιαμάνης
12.	Ψεκασμὸς δένδρων	Γ. Μπίμπασης

PROGRAM

Exercises begin at 5:00 p. m.

OPENING PRAYER

ADDRESSES OF WELCOME

Greek: Demetrios Agapitos

English: John Christides

LIVE STOCK PARADE

Presentation of the Class by the Director of the School.

SCHOOL SONG

GREEK NATIONAL ANTHEM

FARM ACTIVITIES

1.	Reaping and threshing	4 members of the Class
2.	Reaping and binding	A. Zongoudes - C. Vlahos
3.	Raking straw	C. Rizopoulos
4.	Loading straw	3 members of rhe Class
5.	Baling straw	4 members of the Class
6.	Broadcasting grain	E. Dovas
7.	Spreading manure	D. Polichronis
8.	Plowing with tractor	S. Katrakazos
9.	Plowing with horses	E. Pandelakos
10.	Single horse cultivating	K. Makris
11.	Hoeing corn	J. Rousiamanis
12.	Spraying trees	G. Bimbashis

ΤΕΛΕΙΟΦΟΙΤΟΙ ΤΟΥ ΕΤΟΥΣ 1937 - 38

Ἀγαπητὸς Δημήτριος	Καβάλλα
Βλάχος Κωνσταντῖνος	Ἀνθεμοῦς - Χαλκιδικῆς
Γιαννέλος Παναγιώτης	Σαμοθράκη
Δόβας Ἐλευθέριος	Κλεισώρεια - Κοζάνης
Ζαχαριάδης Βασίλειος	Βασιλικὰ - Χαλκιδικῆς
Ζωγκούδης Ἀθανάσιος	Θεσσαλονίκη
Κανελλόπουλος Ἰωάννης	Βέρροια
Κατρακάζος Σωτήριος	Κονδιὰ - Λήμνου
Μακρῆς Κυριᾶκος	Ἄβδηρα - Ξάνθης
Μπετζίδης Γεώργιος	Μονοκκλησιὰ - Σερρῶν
Μπίμπασης Γεώργιος	Χέρσον - Κιλκὶς
Μπόντης Βασίλειος	Λιτόχωρον - Κατερίνης
Παντελᾶκος Εὐάγγελος	Ἅγ. Ἀθανάσιος - Θεσ)νίκης
Παπαδόπουλος Κυριᾶκος	Νικομηδινὸν - Λαγκαδᾶ
Πολυχρόνης Δημοσθένης	Κοκκινόγεια - Δράμας
Ριζόπουλος Χρῆστος	Σκοτοῦσα - Σερρῶν
Ρουσιαμάνης Ἰωάννης	Ἐλευθερούπολις - Καβάλλας
Σενλόγλου Ἰορδάνης	Νέα Φλογητὰ - Χαλκιδικῆς
Συμεωνίδης Ἰωάννης	Ξηροπόταμος - Λαγκαδᾶ
Χατζόπουλος Ἰωάννης	Μονοκκλησιὰ - Σερρῶν
Χρηστίδης Ἰωάννης	Κοκκινόγεια - Δράμας

PARK STATIONERY & PRINTING CORP.
NEW YORK, U.S.A.

Thessalonica to Belgrade

The train first goes through a great alluvial plain with only fair crops of grain although somewhat better than in southern Greece. Shortly after crossing the frontier to Yugoslavia we came into a rolling area with soils developed from shale. Both the uplands and the associated alluvial soils

Figure 137. Poppies for seed in southern Yugoslavia.

are poor. Just before reaching Skoplje we came into a broad valley with good soils and good crops, mostly irrigated. The

Figure 138. Old women hoeing in southern Yugoslavia.

country becomes better watered and both soils and crops improve as we go north. After some 30 miles the soils are dark

Figure 139. Buffalo in southern Yugoslavia.

in color and from the train resemble Chernozem, or very dark

Figure 140. View of Skoplje.

brown Prairie soils.

Figure 141. View from train north of Skoplje.

The agriculture improved quite steadily as the train proceeded. There were more trees as well as more pastures and better pastures (Figure 143). Oxen replaced the donkeys to a

Figure 142. Another view north of Skoplje.

great extent. The people were better dressed and most commonly in their attractive native costumes. There were many Turks and many Turkish minarets. The villages appeared more prosperous

Figure 143. A view between Skoplje and Belgrade.

and more convenient. (Figure 144). From the train I saw wheat that would yield 30 to 40 bushels per acre. Until we got rather

Figure 144. A village many miles south of Belgrade.

near Belgrade almost all the people lived in the villages, but near Belgrade the villages were not so compact and there were a few scattered farms.

Figure 145. A view from the train south of Belgrade.

Figure 146. The lady goes to town.

South of Belgrade

This area has, in general, good soil, largely of the Brown Forest group. Although there is an important area of alluvial soil, the area is mostly rolling with deep soil developed over limestone, probably with a loessial covering.

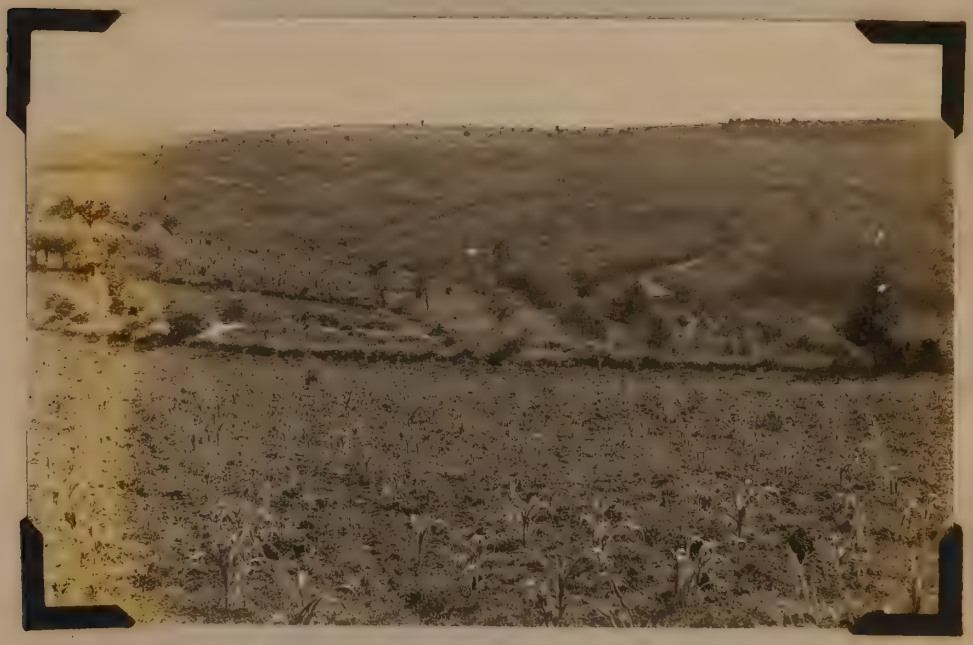


Figure 147. A view near Topolja, southwest of Belgrade. Excellent Brown Forest soil.

Small areas were developed from shale. The highest and steepest portions of the land are devoted to well kept forests under rather strict State law. Although most of the people live in villages, a significant number live on scattered farms. The farms are generally small--7 to 15 acres, total, made up of several small fields. The landscape is dotted with trees and small orchards of fruit--apples, grapes, and especially prunes. Wheat, some corn, and hemp are common crops besides all sorts of vegetables.

courses in agriculture on a four year basis. They can accept about 40 students each year, theoretically on a basis of competitive scholarship, but about 30 of these were outright political appointments.

Figure 150. English half-blood stallion at farm school

Figure 151. Work ox, Kolubara, at farm school

Figure 154. The market place at Valjevo on a holiday.

Figure 155. Delivering fire wood in Valjevo.

It was necessary to pay a tax as we came into Belgrade! A direct exploitation of the country by the city!

Belgrade to Budapest

We drove by car from Belgrade to Novisad through several peasant villages. There were almost no scattered farms. As we left Belgrade we crossed the Save River near its junction with the Danube. It was here that the World War began. We came out upon an enormous plain. The soils are generally flat, heavy and dark brown to very dark brown, superficially,at least, they are similar to the Brookston and associated soils of the Saginaw Valley.

Wheat predominates. At first glance it appears to be in great fields but in fact these great fields are made up of many tiny rectangular fields of 1 to 5 acres. The land is drained, but not uniformly well. Many of the ditches are clogged with weeds and grass and are too shallow. In the fields are many needless ponds and swampy places. Although, in general , the wheat looks good it could be improved a great deal through proper drainage of the land.

All the people live in the villages (which have very muddy streets). Near the village is a large common pasture for cattle, sheep, geese, etc.

We visited a Serbian farmer, one Erenta Mata, Surčin, No. 204. He has 2 horses, 1 cow*, 1 sow with striped pigs from

---

*The chief dairy cattle are Sinantum and the work cattle Siyile, a Hungarian-Asian breed.

old crossing with the wild boar, Mongolitea hogs. Also he had geese and chickens. He cultivated 20 acres of land, but in 7 different fields. In the same village we visited a German farm. These Germans had been brought into the region by Maria Theresa in order to set an example for the others. This place was very neat, especially in the house, and had an excellent kitchen garden.

Figure 156. Entrance to Mata's farm home

Figure 157. Mata's house. Note stork!
Also a chattering grandmother.

Figure 158. Erenta Mata, a Serbian peasant, and his children. (And note that the stork is still there!)

Figure 159. A view from the back of Mata's farmyard.

Figure 160. The stork.

Figure 161. A view in the farmyard of a German peasant in the same village as Mata.

Lunch was had in Novisad and we took the train for Budapest. After leaving Novisad the amount of corn increased greatly. There began to be more scattered farms, especially near the frontier. After crossing into Hungary the soil becomes irregular with low old sand dunes, frequently with swales, often salty, between. The land appears to be an old clay lake plain, irregularly covered with sand. Fruits, tree fruits, and grapes, were grown on the light textured soils. There was considerable pasture, especially in the more poorly drained places, part of which was used for native hay.

Figure 162. View from train between Novisad and the Hungarian frontier. One of the few "scattered"farms.

Besides, there were wheat, corn, oats, and some other crops.

The land was handled very well indeed from a technical point of view. Excellent drainage had been accomplished, in places under bad conditions. The agriculture seemed very progressive indeed.

DUNĐERSKOVO SPECIJALNO PIVO
DUNĐERSKISCHE SPECIAL BIERE

JELOVNIK
SPEISEKARTE

PIVARA I RESTORACIJA
ZAPLETAL STOLZ KARLO

NOVI SAD, ...

РУЧАК	ДИНАРА DINARA	MITTAGMAHL
		Суппе: / **Suppe:**
Флекице	2.-	Flecken
Кисели паиу	3.-	Saure Rangout
		Ајнлаугеш: / **Aufgeschnitten:**
[illegible]	8.-	mit Wurst Lose
[illegible] хреном	8.-	" Essigkren
		Гемисе: / **Gemüse:**
	10.-	Kohlkraut mit auflage
	10.-	Kürbis " "
	[illegible]	[illegible] mit Butter
	12.-	Kartoffel " "
		Јела: / **Entrees:**
Пуњене паприке	12.-	Gefüllte Paprika
Тиквице	12.-	" Kürbis
Телећи шницл са јајетом	12.- 8.-	Kalbs Röstl mit Erdöpfel
Говеђи гулаш " "	10.- 7.-	Rinds Gulasch " "
Шницл са јајетом	12.- 8.-	Schnitzel mit Spiegelei
Печење:		**Braten:**
Пуњено печено ћурле	14.- 10.-	Gefülltes-Hühn
Печени бучоњевац	14.- 10.-	Nierenbraten
" грудо	14.- 10.-	Kalbsbrust
Свињски кре	14.- 10.-	Schweinscarée
½ Пожарско ћурле	15.-	½ Backhühn
Пожар. печ. ноге са шпрајцом	14.- 10.-	Gebackene Kalbsfüsse - Tatar
Кобаје пожарске сомунице	14.- 10.-	Hirn gebackene semmel
Пожарска печ. џиграја	14.- 10.-	Gebackene Kalbsleber
Салата:		**Salaten:**
Растављач - кисељ, зелена	3.-	Erdöpfel Häuptel, Gurken -
Пароској салата	6.-	Paradeis
Слатко:		**Mehlspeise:**
Штајерске палачинке	6.-	Steirische Nudeln
Сир:		**Käse:**
Švajцарац, Трапист	6.-	Emmenthaler, Trappisten
Едамац	6.-	Sonborer
Кисело млеко	3.-	Saure Milch
Воће:		**Obst:**
Ананас конзе	5.-	Ananas Erdbeeren
Шумске " "	5.-	Wald "
Компот од вишања	5.-	Weichsel Kompot

DUNĐERSKOVO SPECIJALNO PIVO
DUNDERSKISCHE SPECIAL BIERE

ЈЕЛОВНИК
SPEISEKARTE

PIVARA I RESTORACIJA
ZAPLETAL STOLZ KARLO

НОВИ САД, ...

ВЕЧЕРА	ДИНАРА DINARA	NACHTMAHL

-1574-

38—18

SPEISEKARTE

The Agricultural Museum in Budapest

This museum is said to be the best of its kind in the world. It is a most excellent institution and well arranged according to the modern principles. Every phase of the whole agriculture of Hungary is exhibited in a most interesting way. Such an institution would be of great value in our own country.

Budapest to Vienna

As we left Budapest the farming was much like that we had seen on the way from Novisad. The wheat was most excellent, much of it would yield 40 bushels per acre. There was an increase in sugar beets and these, as well as the other crops, were almost entirely free of weeds. There were a significant number of fields of alfalfa. In Budapest and in Hungary there were beautiful horses. I have never before seen a city with such fine horses employed for hauling carts. After we crossed into Austria, although the agriculture was good, it did not come up to that of Hungary. The crops were weedy and less well cared for. There was probably a somewhat higher percentage of sugar beets. The day was rainy and too cloudy for pictures from the train.

Vienna to Berlin

Along the Danube in Vienna is a large open strip of flood plain in grass. Since this area is subject to flood, the construction of buildings is not permitted. At the edge

SHORT GUIDE

OF THE

ROYAL HUNGARIAN

MUSEUM OF AGRICULTURE

BUDAPEST, 1934

SHORT GUIDE

OF THE

ROYAL HUNGARIAN

MUSEUM OF AGRICULTURE

BUDAPEST, 1934

Editor: Royal Hungarian Agricultural Museum.

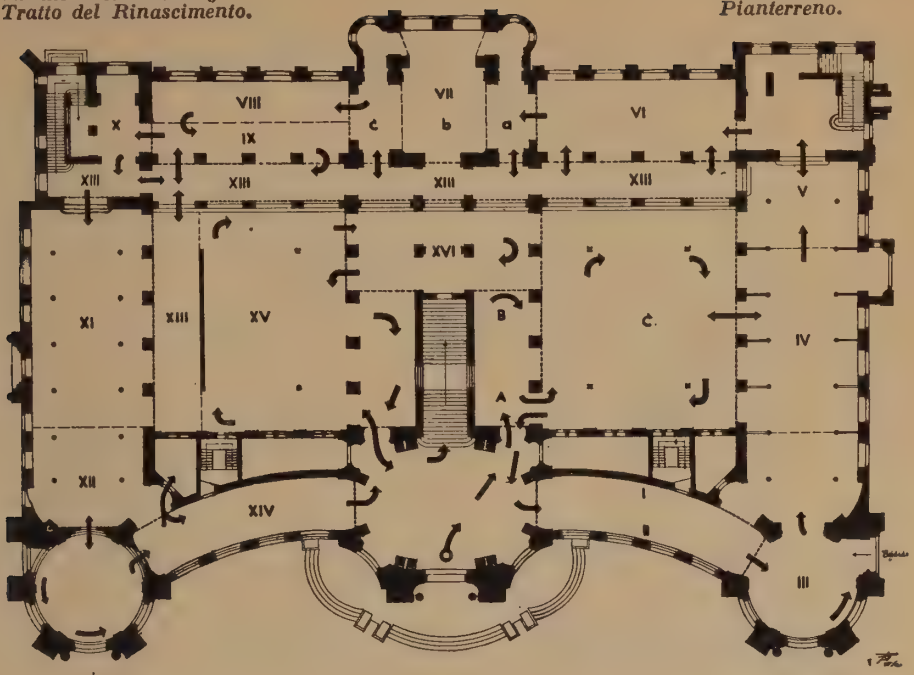
PRINTED BY STEPHANEUM LTD.

Budapest, VIII., Szentkirályi-u. 28. — Manager responsible: Francis Kohl junior.

Renaissance épület.
Ren. Flügel.
Aile Renaissance.
Renaissance Building.
Tratto del Rinascimento.

Földszint.
Erdgeschoss.
Parterre.
Ground floor.
Pianterreno.

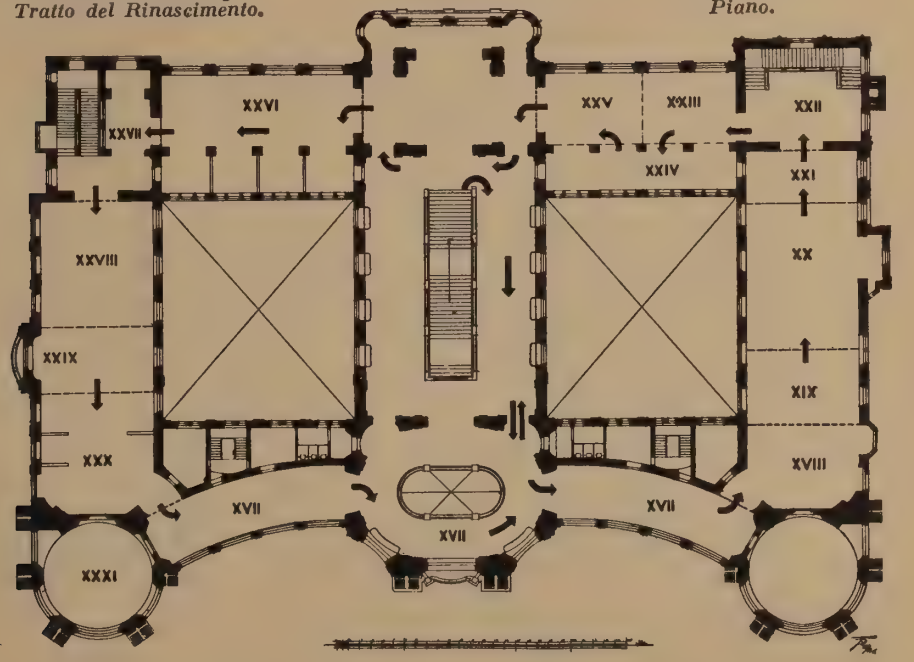
I



Renaissance épület.
Ren. Flügel.
Aile Renaissance.
Renaissance Building.
Tratto del Rinascimento.

Emelet.
Obergeschoss.
Étage.
First floor.
Piano.

II



Gótikus épület.
Gotischer Flügel.
Aile gothique.
Gothic Building.
Tratto gotico.

Földszint.
Erdgeschoss.
Parterre.
Ground floor.
Pianterreno.

Gótikus épület.
Gotischer Flügel.
Aile gothique.
Gothic Building.
Tratto gotico.

Emelet.
Obergeschoss.
Étage.
First floor.
Piano.

History of the Museum.

The idea of founding the Royal Hungarian Museum of Agriculture was first suggested on the occasion of the celebration in the year 1896, of the Millenium of Hungary; the valuable agricultural material collected for the Millennial Exhibition being employed to form the nucleus of the rich collection subsequently concentrated in the Museum.

Dr. Ignatius Darányi, the Minister of Agriculture then in office, accepted the suggestion of the National Hungarian Agrarian Association and decided to have the temporary buildings of the Historical Section re-constructed and to devote the same to the service of Hungarian agrarian science.

On his proposal the Hungarian Legislature at the opening of the present century voted two amounts of 2,000.000 and 400.000 gold crowns respectively for the purpose, so that it proved possible very shortly to begin the work of re-construction.

Our great architect, Ignatius Alpár, carried out the work in a manner in keeping with the purpose; and in the spring of the year 1904 the collections were transferred fromt heir temporary in Kerepesi- (now Rákóczi) út to the new buildings. The scientific grouping and arrangement of the material was effected very rapidly; and early in the month of june, 1907, the Museum was formally opened, in the presence of all the notabilities of the country, by His Majesty the Emperor-King Francis Joseph I.

The Museum has since been at the service of agriculture, serving alike to train Hungarian and foreign farmers and to give pleasure to an ever-increasing number of visitors. However, in view of the enormous development of agrarian technique, life has advanced a speed leaving far behind the work of supplementing the collections; and in particular during the Great War and the period of oppressive depression which followed, the Museum began gradually to lose its touch with life and ceased to be a true mirror of the splendid achievements of Hungarian labour and Hungarian soil.

Recognising the importance attaching to a thorough re-organisation of the Museum, the present Minister of Agriculture, Nicholas Kállay de Nagykálló decided to renew the material composing the collections and to scientifically supplement the same. He enlisted the services of the most eminent agrarian experts in the country for the purpose. The zeal of the workers has overcome all obstacles, and on the occasion of the Sixteenth International Agrarian Congress to be held in Budapest, on June 14th., 1934, His Highness Admiral Nicholas Horthy de

Nagybánya, Regent of Hungary, formally opened the re-organised Museum, which bears eloquent testimony to the resolute industry of a virile people co-operating zealously to secure a better future.

Object of the Museum.

The object of the Museum is to display the development of Hungarian agriculture in all its various branches: alike in the cultivation of plants proper and in cattle-breeding, fishing, hunting (shooting) and forestry. It is not intended to be a mere collection of antiquities or curiosities; nor is there any attempt to offer a complete picture of the past history of agriculture: its object is to teach and encourage. This is done by conducting visitors from the very elements of agriculture to the most highly developed branch of the same, everywhere introducing the more important moments of industrial production. In addition to a display of the technique and achievements of agrarian production, the Museum everywhere affords a survey also of the foes of agriculture, teaching farmers how to protect the fruits of his arduous labour against attacks from without. The abundant statistical material and other informative exhibits display to inquirers marketing possibilities, at the same time showing them how and in what fields they must improve their methods of husbandry and telling them where they may find expert assistance in their endeavours to effect such improvement.

The library contains 35.000 volumes for special agricultural investigation.

Description of Buildings.

The group of buildings containing the Museum of Agriculture is one of the most important architectural monuments of historic significance in the Hungarian metropolis.

The architect responsible for the work of re-construction, Ignatius Alpár, transformed the most picturesque sections of the historic buildings erected for the Millennial Exhibition into a harmonious whole serving to illustrate the development of Hungarian architecture from the period when the Magyars occupied Hungary down to the reign of the Empress-Queen Maria Theresa.

The Romanesque group shows the style of architecture prevailing in the period during which kings of the House of Árpád ruled. The cloister-garth is built in the style in vogue in the thirteenth century, the details preserving the motives of the Hungarian art memorials of the Romanesque period. The door of the chapel attached to this court is an exact reproduction of the door of the church of the Benedictine Abbey at Jáák founded by St. Stephen, the first King of Hungary.

The archway leading to the Gothic group which, with its stump tower, stands to the right of the bridge is a reproduction of a section of Segesvár Castle in Transylvania. The section of the block of buildings facing the lake is a copy of Vajda-Hunyad Castle (also in Transylvania), together with a section of Csütörtökhely Chapel and the far-famed tower which bears the name of «Nye bojsza»; the section facing the islet — which section is commanded by the migthy tower of the town of Segesvár — is pure Italian Gothic in style. The loggia to the right of the statue of Count Károlyi is late Gothic; above it is a section of the Chapel of Csütörtökhely.

The principal facade of the Renaissance group is in the style prevailing in the days of Maria Theresa and comprises the motives of several famous buildings (the Royal Castle in Gödöllő; the Grassalkovich Mansion in Pozsony); the big dome is a reproduction of a section of the gateway of Gyulafehérvár Castle (also in Transylvania). The sections facing the lake reproduce the motives of German Renaissance buildings in Hungary; the corner tower is a copy of the Catherine Bastion in Brassó (Transylvania), the jetty being a reproduction of a section of Bártfa Town Hall (Upper Hungary). The facade overlooking the canal is in the Baroque style of the seventeenth century.

RENAISSANCE BUILDING.

Passing out of the hall to the right we reach the first group, that of

I. Meteorology.

Above, the most recent monthly weather report of the Meteorological Institute **(1)** (printed; in frame). Below, the most recent day weather report of the Meteorological Institute **(2)**, and an instrument for measuring the atmospheric pressure **(3)**; on a small table, an instrument delineating the angle of irradiation of the sunlight and the variations in size of the area thus irradiated **(4)**. Suspended, a barograph **(5)**.

The pictures etc. hung on the other sections of the walls: Hungary's network of meteorological observatories in 1914 and 1934 respectively **(6)**.

In the folding case fastened to the wall, 26 climatic charts of Hungary based on the data for the period 1901—1930.

Next to the above, portrait of the late Nicholas Konkoly-Thege, former Director of the Meteorological Institute (painting, in frame); below the same, 4 charts showing the distribution of rainfall during the rainiest **(7)** and the driest summer month **(8)** respectively, and the distribution of temperature in Hungary on the warmest **(9)** and the coldest days **(10)** respectively.

The exhibit standing in front of this section of the wall delineates the climatic importance of the several types of regions (top of mountain, valley, plain, sea-board, etc.).

Upper row of illustrations: Köppen's climatic chart of Hungary **(11)**; distribution of rainfall in Hungary from 1901 to 1930 **(12)**; amounts of summer and winter rainfall recorded by 4 meteorological stations during 80 years **(13)**.

Lower row of illustrations: Network of European meteorological stations sending telegraphic (wireless) reports **(14)**; 7 drawings showing the interconnection of weather conditions and harvest results **(15)**, also the sources of the data collected by meteorological service and the persons utilising the same **(16)**. To the right, on the long table, exhibits showing the quantities of heat obtained from the sun by the various slopes (differing in situation and gradient). In the folding case fastened to the wall, another 26 climatic charts of Hungary based on the data for the period 1901—1930 **(17)**.

Over the door, rainfall chart of Hungary in relief based on

the data for the period 1882—1891. On the next wall, diagram showing average rainfalls of the various counties.

Revolving, disciform picture fastened to the wall shows the amount of sunlight enjoyed by the variously-situated villages.

Without the building a meteorological station has been located, with instruments for measuring temperature and humidity of atmosphere ; also provided with a vane : rain gauge and evaporometer (with instruments for measuring temperature and moisture).

II. Agrogeology.

The Agrogeology section is located on the side near the window. It contains soil maps of general interest, profiles of typically Hungarian soils, and a collection of soil-samples.

At the head of the group, geological maps of Hungary in the years 1914 and 1933 respectively **(18)**. Below the *first window*, maps showing the soils of Hungary in the years 1914 and 1933 respectively **(19)**. On the windows, meteorological transparencies ; in the show-case, samples of typical soils, together with data relating to their analysis.

In the spaces between the windows, collection of profiles of typical Hungarian soils.

Below the *second window*, map showing the artesian wells of Hungary **(20)**. On the window transparencies connected with soil science. In the show-case, another part of the collection of soil-samples.

Below the *third window*, scheme for providing the shores of Lake Balaton with a supply of drinking water **(21)** : on the windows, transparencies illustrating soil science. In the show-case, a further part of the collection of soil-samples.

Below the *fourth window*, map of the alkaline soils of Hungary **(22)** showing the distribution of soda soils and those containing no lime respectively. On the windows, meteorological transparencies ; in the show-case, soil-samples. — At the end of the section, model of the kind of map dealing with the technique of production which is to be employed to serve as basis for controlled agricultural production. Above the same, a map showing the dynamic properties of the soil-types of the same area.

In the round room next to the passage, and in the first part of the large room on the left, has been placed the next section —

III. Soil Science ; Soil Improvement and Fertilising.

In the round room are exhibits showing the physical, chemical and biological properties of the principal types of soil found in Hungary, the methods and means required for the work of investigation, and a few important moments of soil improvement,

with particular regard to the amelioration of the alkali soils which are of such importance in Hungary.

In the upper part of the show-case **(1)** in the centre, on the large picture on the window side, we find the soil-profile of Hungary in outline from Veszprém to Bihar County, the types of soil being shown on the margin of the profile ; also a chart showing the distribution of temperature and rainfall over the said area. On the opposite side of the show-case, a picture showing in outline the processes of leaching out of the soil which take place in the several media.

On the narrow sides of the upper part may be seen exhibits graphically delineating the sections of the profiles of the 9 principal Hungarian soil-types ; and on the revolving drums exhibits showing the physical and chemical properties of those soils.

In the obliquely shaped central part will be found a collection of vegetable moulds from the profiles of a few important Hungarian soil-types, and in the lower part of the case other vegetable moulds.

In the show-case **(2)** are exhibited a few instruments (original size) required for soil investigation on the spot ; also model of a profile trench on the scale of 1 : 10.

On the wall : description of methods of taking soil-samples, also of the importance attaching to the liming of light soils ; physical, chemical and biological effects of liming ; map showing the pH-values and lime-conditions of a farm **(3)**.

In the other show-case **(4)** are to be seen pure cultures of certain root nodule bacteria : also models showing effect on development of the clover plant of inoculation with such bacteria.

The microscope which may be used by visitors, serves to magnify various soil micro-organisms.

On the wall, diagrams showing the number and distribution of soil micro-organisms **(5)**.

In the next show-case **(6)**, a few important instruments used for the investigation of soils will be found on a laboratory table : exhibits illustrating saline-soda soils and their improvement.

Also in a show-case, the materials needed for the improvement of alkali soils **(7)** ; on the table, original and improved samples of the two principal groups of alkali soils, heavy, leached out type and saline-soda soils, the exhibits showing also the changes caused by rainfall.

In the last show-case **(8)** we see the effect upon the physical condition exercised by the various improvement materials. In the same place will be found an apparatus serving to show the difference between the respective percolation capacity of original and improved alkali soils.

On the wall, plant preparations placed on boards illustrate the various associations of the flora of alkali soils **(9)** ; also diagram showing distribution of salt in the irrigated meadow at Békéscsaba, together with a map of the same and statistical data referring to the crop yield and yield in money of the same. Section

model **(10)** showing the subsoil and underground soil conditions of the meadow and its stratification.

One of the dioramas illustrates improvement of soda soils by chemical materials, boxing and pisciculture respectively **(11)**, while the other **(12)** shows the methods of reclamation of leached out alkali soils by liming, use of «digo» earth and a covering of sand respectively.

On the walls, graphic delineation of the physical, chemical and biological properties of alkali soils (soda soils) prior to and after improvement **(13)** ; and graphic delineation of the physical and chemical properties of alkali soils poor in lime in the case of original and reclaimed soil respectively **(14)**.

In the doorway, a hanging picture giving an outlined scheme of the total circulation of materials and showing the practical utility of soil investigations. On the wall of the bridge outline of the circulation of nitrogen and carbon **(15)**.

On the *first window* to the right of the entrance, photographs of heavy alkali soils poor in lime ; on the *second*, alkali soils (poor in lime), and soda soils ; on the *third*, soda soils (in each case, also the improvement of the same).

In the part of the room following the doorway, we find sketches demonstrating the production of certain artificial fertilisers, from the production of the raw materials down to the delivery of the ready articles ; also statistical data showing the importance of artificial fertilisers, original pictures illustrating the effect of artificial fertilisers ; also exhibits showing the half-finished and ready products, together with their chemical composition.

In the show-cases, exhibits showing the essential features of soil investigation, models illustrating the procedure employed under the Neubauer method ; the correct method of packing soil samples is also shown by models, together with directions for taking samples **(1)** ; various kinds of artificial fertilisers, with analytical data. On the walls on the right, illuminated transparencies illustrating the production of potassium artificial fertilisers, and statistical data in diagrams relating to the consumption of potassium fertilisers in Hungary and in foreign countries ; also photographs illustrating the effect produced by potassium fertilisers **(2)**. Exhibits illustrating the production of cyanamide, together with statistical data relating to the consumption of cyanamide in Hungary and abroad (diagrams) and photographs showing the effect produced by cyanamide **(3)**. Exhibits illustrating the production of superphosphates, together with statistical data relating to the consumption of superphosphates in Hungary and abroad (diagrams) and photographs showing the effect produced by the use of superphosphates **(4)**. Next we see the influence of artificial fertilisers upon the development of plants (shown by the help of the preparations of a few plants reared during experiments in pots with artificial fertilisers) ; also a minimum tub and statistics of the consumption in Hungary of the various kinds of artificial fertilisers shown in figures and in graphic outline **(5)**.

Bird's-eye view of the establishment of the Pét Nitrogen Manufacturing Co. Ltd. ; the several moments of the production of Pét salt shown by illuminated transparencies ; illustration of the effect of Pét salt ; and exhibits of the various materials produced in the factory **(6)**.

Round the columns, graphic scheme of the activity of Hungarian soil laboratories ; graphic delineation of the pH value optimum of a few important agricultural plants ; graphic illustration of the interdependence of type and nutritive power of soils **(7)** ; graphic outline showing the activity of Hungarian soil laboratories, the quantity of nutritive materials extracted from the soil every year by the more important agricultural plants (per cadastral yoke), and star showing how artificial fertilisers may be mixed **(8)**.

IV. Regulation of waters and their utilisation in agriculture.

The material exhibited in this section is arranged in eight divisions numbered from 1 to 8.

Facing the entrance is a statue of *Paul Vásárhelyi*, the greatest hydraulic engineer of Hungary (1795—1846).

1. *Flood-control* is shown in the first division on the left. The topographic map in the centre represents the extent of flood-controlled areas in Hungary. Two tables, one on each side, display comparisons of these unrivalled achievements with other remarkable works in Europe. Two dioramas of large dimensions depict the floods which flowed down the Tisza river in the beginning of the nineteenth century **(9)** and in a recent year **(10)**, respectively.

2. *Flood-control and surface drainage* is the title of the next division, displaying the technical and economic results of this vast achievement of civil engineering. The model standing in the centre (presented by the Ganz Co. Machine Works) illustrates the removal of waters drained from surfaces behind levees. Two maps and several photographs show pumping plants and sluices.

3. *Regulation of watercourses* is demonstrated in the next division with large photographs showing stabilisation of gullies, maintenance of smaller watercourses, drainage of inland marshes and protection of river banks. Two smaller dioramas **(11)** demonstrate the cultivation of sloping lands.

4. *Irrigation* is the subject of the next division. On the left side are shown the part played by water in plant life **(12)**, the water requirement of plants **(13)** and Liebig's minimum-pail **(14)**. In the centre : the practice of irrigation, crop productions **(15)**, a map of irrigations in Hungary **(16)** and the various methods of irrigation in photographs and models. On the right side : Hungarian special devices, such as an irrigating nozzle affixed to a boat, and a simple water-lifting device used by our farmers **(17)** (the latter may be put in operation.).

The further material of the hydraulic group is arranged along the opposite all of the room.

5. *Subsurface drainage*, its object and results, is shown in division No. 5. One model represents a system of drainage completed **(18)**, and another a system in process of construction **(19)**. The implements employed in tile drainage, including the so-called mole-plough, are also exhibited.

6. *The Hungarian navvy* (kubikos), who has gained widespread fame for his eminent ability for work, is commemorated in a separate division. (The daily output of a kubikos averages 10—14 cubic metres.) These sturdy labourers have signalized their name in the history of hydraulic works in Hungary by constructing vast earthworks of about 400 million cubic metres. The life-size group shows navvies of the period about 1870, who, having finished their work in one place, are starting for another scene of activity, carrying all their tools and implements (including the rush tent).

7. *Waterways in the service of agriculture.* In the centre there is a perspective view of the Budapest duty-free harbour **(20)** and other pictures and diagrams pertaining thereto. On each side there are tables explaining the significance of waterways for agriculture, maps showing the waterways of Hungary in the years 1914 and 1933 **(21)**, as well as another table **(22)** illustrating shortenings of waterawys attainable by the proposed Danube-Tisza Canal. In the centre of the division is placed a relief map of that canal, and in front is a model of the granary of the Budapest harbour **(23)**.

8. *The organisation of the hydraulic service* is displayed in the last division. In the centre stands a statue of Eugenius Kvassay (1850—1919), founder of the Hungarian agricultural engineering and uniform hydraulic service. The table next to the statue **(24)** gives a summary of the problems and organs of the hydraulic service. The special spheres of activity of the river improvement and agricultural engineering services are shown by a series of photographs. Maps indicate the districts of hydraulic boards **(25)** and levee companies **(26)**, respectively. Worthy of mention are also the two maps **(27)** that illustrate the Hungarian flood-signalling service of 1914 and of 1930.

On the tables placed in the compartment are to be seen the official publications, in recent years, of the Hydraulic Engineering Board of the Royal Hungarian Ministry of Agriculture.

*

The exhibited material of the Central Office of the Inspector of Fishery, which is an organ of the Hydraulic Engineering Service, is arranged in the Gothic part of the building as a part of the fishery group.

Leaving the Hydraulics section, we come next to that dealing with

V. Pasturage and Grass-growing,

which has been placed in two rooms.

On the table to the right of the entrance may be seen models of the herdsmen's hovels to be found in Hungary **(28)**; in the cases placed on the walls, the seeds of various grasses **(29)**, with notes showing the percentage of purity and growth required in Hungary. The diagram placed above the first case shows — per county and pasturage union respectively — the graziers' associations established down to the year 1933.

The diagram placed above the next case shows the distribution of state subsidies and loans at reduced rates of interest, granted for the purpose of the improvement of pastures **(30)**. On the table between the cases, models showing the methods of storing hay usual in Hungary **(31)**. The diagram above this table delineates the area of the joint and public pastures in Hungary and the size (extent) of pastures improved down to the end of the year 1933. The diagram placed on the right-hand wall opposite shows the quantity of seeds distributed at reduced prices for the purpose of creating lawns **(32)**; below the same, may be seen a typical Lowland hayrick **(33)**. Of the two models placed in the centre of this room, one is a model **(34)** showing a typical public pasture which has been neglected ; the other shows the same pasture after it has been improved **(35)**. In the lower part of the show-case **(36)** in the left-hand half of the room have been placed the seeds of various species of grass and clover, with notes showing the required percentage of purity and growth ; on the wall side of the case may be seen samples of typical kinds of hay. On the table beside the case **(37)** and on the wall **(38)** opposite the entrance, models of hayricks.

One of the diagrams on the left-hand wall shows the courses in pasturage **(39)** subsidised by the State down to the end of 1933 ; the other diagram giving a summarised statement of the public action for the improvement of meadows and pastures **(40)**.

The model in show-case No. **41** demonstrates the practical carrying out of the works connected with the improvement and keeping in good condition of pastures ; on the table on the other side of column, models of the hovels of Lowland herdsmen **(42)**. On the walls may be seen the cultivated plants and weeds found in meadows and pastures **(43)**, in the form of dry preparations and such preserved in alcohol. On the columns, photographs connected with pasturage and meadow husbandry.

In the corridors left-hand from the room the protection of the plants is exhibited, so that near the products exhibited in the large rooms the pests of the same may be found together with the protection against the pests. (See XIII. Plant protection p. 22.)

The model in the next corner room delineates a pastoral scene. In the left-hand show-case may be seen the agricultural

implements required for the carrying out of work connected with pasturage and meadow husbandry **(1)**, and in 2 other cases **(2)**, the implements required in the life of herdsmen.

In this room, in front of the column, are exhibits of Hungarian reed-bundlesthese reeds being very much in demand for use in stucco work. On the walls, preparations (dry and in alcohol) of the cultivated plants and weeds found in meadows and pastures, together with photographs connected with pasturage and meadow husbandry.

In the next room we find the section dealing with

VI. Fodder Plants.

In this room are exhibits of all the gramineous and other fodder plants found in Hungary. Water colours show the plants themselves, the composition of the same as ascertained by investigations made in Hungary, and data relating to their production in Hungary.

On the wall of the room, towards the right, may be seen diagrams **(1)** showing the maize sown thickly for fodder purposes, special stress being laid on this type of plant. On this wall we find also diagrams demonstrating the continuity of summer feeding with green fodder **(2)**, the diagram showing — by periods and the more important areas of production in Hungary — the succession of summer green fodder plants most used in this country.

In the centre of the next wall may be seen the world-famed lucerne of Hungary **(4)**. Here special attention should be devoted to the photographs exhibiting the comparative experiments carried out during five years with blue lucerne derivatives collected from all over the world. To the right and left of the lucerne are diagrams of the investigations connected with the determination of the numerical measure of the nitrogen collected from the atmosphere **(5)** ; below the same, in the form of preparations preserved in alcohol, may be seen the more important species of clover, together with their roots and tubers : there are separate exhibits showing the root and tuber development of plants grown in various kinds of soil and manured in various ways. To the right of the preparations in alcohol we find exhibits of red, purple, white and hybrid clover, and to the left exhibits of sainfoin, the common kidney vetch, melilot, etc. On the table, seeds of the various species of clover, together with typical tare seeds **(6)**, and exhibits showing the processes of cleansing the raw products **(7)** and the State marking (with cockets) of red clover and lucerne seeds **(8)**.

On the other walls may be seen illustrations and diagrams relating to Soudan grass **(9)**, the various species of vetch **(10)**, fodder pulse **(11)**, and the other gramineous fodder plants which are not papilionaceous **(12)**. Each exhibit shows separately the

plant itself, its chemical composition and the numerical data referring to its production. On the tables in front of the walls, glass cylinders containing seeds of the respective plants.

Also on the wall may be seen pressed specimens of the more important Hungarian species of lucerne and clover **(13)**.

In the case placed in this room the herbarium collection of *graminea* as ordered by *Professor Dégen* **(14)** ; above the same, coloured illustrations of the more import ant taresoccurring among the forage plants : in the conical show-case, the more important gramineous and **(15)** other forage plants most frequently found in Hungary **(17)**. In the show-case may be seen reduced models **(16)** of the methods of preserving fodder most in use in Hungary, together with a collection of the tare seeds of the Seed Testing Station and the more important instruments employed for testing seeds **(18)** **(for the objects exhibited in the left-hand passage, see Section XIII. Plant Protection below, p. 22.)**.

Leaving the room devoted to forage plants, we come next to the section dealing with

VII. Root Plants.

The first of the exhibits is the **turnip.** On the left-hand wall we find the turnip plant, together with a diagram showing the figures relating to the peculiarly Hungarian methods of cultivation **(1)** ; next to the same, the chemical composition and inflorescence of the turnip **(2)**. On the wall of the next column, illustrations of the typical leaf-formation, leaf-colouring of the turnip plants manured in various ways and of the various kinds suffering from a lack of manure **(3)** ; next to the same, water-colour illustrations showing deviations in the quantity of sugar contained in turnips. It may also be seen the more important moments of polarisation **(4)**.

In the lower part of the show-case in the centre of the room **(5)** may be seen the more important moments of the work of cultivating the turnip (shown in water-colours), and the effect of plantation on the development of the root (series of photographs). In the upper part of the show-case, models of the species of turnip most commonly cultivated in Hungary.

In the corner room to the right of the sugar-beet show-case is located the

sugar industry

section.

On the table, a model of the Ercsi Sugar Refinery **(1)** ; in the frames, diagrams **(2)** illustrating the manufacture of sugar ; also maps showing the sugar manufacture of Pre-War Greater Hungary **(3)** and of Dismembered Hungary **(4)** respectively. On the shelves, intermediate and final products of sugar manufacture. On the wall, statistics relating to the output of Hungarian sugar refineries **(5)**, statistics of Hungarian sugar export **(6)**,

diagram showing manufacture of molasses **(7)**, and map of the world illustrating Hungarian sugar export **(8)**.

In the centre of the group has been placed the **tobacco** exhibits. In the show case **(6)** are exhibited both models of the buildings of the Royal Hungarian Tobacco Experimental Station and models of the various types of tobacco-sheds used in Hungary. On the sides of the case, coloured photographs showing the more important moments of tobacco-growing ; while in the lower part of the case are to be found profiles (vertical sections) of the typical Hungarian soils used for the growing of tobacco. On the wall opposite the show-case, the equipment used by Hungarian tobacco-planters, together with a tobacco-planter's dwelling **(7)** ; to the right and left of these exhibits, diagrams showing various statistical data relating to tobacco-growing.

The case placed to the right of the show-case, in the centre **(8)**, we find leaves of improved garden tobaccos and of hybridous tobacco plants reared by the Royal Hungarian Tobacco Experimental Station ; in the case to the left **(9)** sample bunches of tobaccos improved by the Royal Hungarian Tobacco Experimental Station and grown in the circuits of the several Royal Hungarian Offices for the Purchase of Tobacco.

Next to the case containing improved tobacco leaves are exhibited the methods of traeting improved tobacco seeds and of preparing tobacco seeds — the processes being shown partly in pictures and partly by exhibits of the actual working **(10)**.

In the show-case **11** may be seen all the half-finished products of the Hungarian Tobacco Régie; in the show-case on the right **(12)**, all the ready products of that Régie.

Opposite the show-cases containing the half-finished and ready products respectively, are exhibited — partly in pictures and diagrams, partly by exhibits of the actual processes — the manufacture of tobacco and the manufacture of nicotine and the products of the same.

On revolving stands may be seen exhibits demonstrating the commonest diseases of the tobacco plant and the damage done by the same.

The section following that of tobacco is that of the **potato.** On the side of the column, water-colour drawing **(13)** showing the potato plant ; below the same, data relating to its cultivation. On the wall which follows, the chemical composition and inflorescence **(14)** of the potato ; opposite, diagrams **(15)** showing the connection between rainfall and the potato crop, and finally, statistical data relating to the production of potatoes in Hungary **(16)**, together with various photographs illustrating the cultivation of that plant. In the lower part of the show-case placed in the middle of the room **(17)** may be seen models of those species of potato which are cultivated en masse in Hungary, and on the other side, models of the most recent improved species of Hungarian potato. On the top of the show-case, altogether 10 water-

colour drawings illustrating the most important moments of the cultivation of potatoes.

In the next corner room we find the

spirit industry

In the frames, diagrams illustrating manufacture of potato spirit **(1)**, and map showing the spirit distilleries of Dismembered Hungary **(3)** and of Pre-War Greater Hungary **(2)** respectively. On the table, model of agricultural spirit distillery at Szentgyörgypuszta **(4)** and the products of spirit manufacture, in bottles. On the walls, quantities — in metric quintals — of raw materials manufactured by the Hungarian spirit industry **(5)**, distribution of Hungarian spirit output according to manner of utilisation **(6)**, diagram showing manufacture of sugar beet spirit **(7)**, various manners of utilising spirit **(9)**, and map of world illustrating Hungarian spirit export **(9)**.

In the next room have been placed the next groupes :

VIII. Industrial and Medicinal Plants.
IX. Leguminous Plants.

On the right hand side of the room we see the process of the manufacture of hemp, from the raw fibrous rind to the hackled raw material (commercial hemp), then the process of manufacture into thread, cordage and sacking **(1)**. The next exhibit shows the export packing of hempen goods **(2)**. In the same place, in a frame hanging on the wall, may be seen the natural shape of hemp in flower and in seed, maps showing the hemp factories of Hungary in 1914 and 1934 respectively and marking the proportion of the same now in severed territories. The next exhibits, on the table, show the species of flax of various origins in sheaves ; in front of the same, flax seeds and a colection of the tare seeds found growing in flax fields **(3)** ; then, sheaves of the various oleiferous species of linum, together with the corresponding seeds. Here may be seen also the Hungarian and Argentine linseed used in commerce.

On the wall behind the flax exhibits may be seen an illustration of the flax plant ; on either side of the same, the roots of flax and oleiferous linum **(4)** followed by a series of illustrations delineating the process of manufacture of flax and oleiferous linum and diagrams showing the results of the flax experiments — experiments with flax species, experiments relative to quantity of seed, changes in amount of oil contained in the seed during the various periods of development of the oleiferous linum and results of experiments with improved Hungarian carried out flax in foreign countries. Finally, maps showing the development of contractual production in Hungary and also the factories engaged in the manufacture of flax in the Hungary of 1914 and 1934 respectively.

Next, on a table, may be seen the seeds of Hungarian oleiferous plants and the oils made from the same **(5)** — viz. sunflower oil, rape oil, soy bean oil, poppy oil and castor oil. On the wall behind the materials shown here may be seen illustrations of the oleiferous plants. The material collected in one of the show-cases in the centre of the room displays the process of manufacture of the oleiferous linum **(6)**, while in the other — larger — show-case is exhibited the manufacture of flax from the beginning to the hackled raw material and then to the production of the thread and on to the linen in preparation, and finally to the ready linen goods **(7)**.

In the *medicinal plants* group we find exhibits of those plants which are in use in medical science and in the connected pharmaceutical and chemical industries. We are shown the whole plant, together with that dried part of the plant which supplies the drug, its seeds, its embryo, preparations for the production of which it is used, data referring to the propagation and manufacture of those preparations, those other plants for which it may be mistaken and which may be used to counterfeit it, and the most important diseases to which it is subject.

In the show-case **(8)** may be seen the whole plant preserved in a liquid, specially prepared for the purpose. On either side of the stand, maps showing the dissemination of those plants which are not to be found everywhere in the country. In the case against the wall **(9)** may be found *in the middel part*, drugs, *in the upper part*, the seeds and fruits respectively of medicinal plants ; larger specimens of drugs, collecting utensils, and embryos.

In stereoscope : photographs relating to the collection and manufacture of medicinal plants.

Turning back to the left, we find in the room exhibits illustrating *leguminous plants*. On the walls of the columns, lentils **(10)**, pease **(11)**, beans **(12)**, and diagrams showing the nutritive power of leguminous plants **(13)**. In the case of each of these plants may be seen the plant itself, its chemical composition, figures relating to cultivation, and its inflorescence. The map shown in connection with beans tells us which species is most suitable for mass cultivation in the several districts of Hungary. **(For the exhibits in the left-hand passage, see XIII. Plant Protection p. 22).**

In the case of each individual leguminous plant, on the table in front of the wall-surface occupied by the respective plant may be seen a detailed collection of seeds of the various species, in bottles. The next group in the little room is that of the

X. Paprika (Red Pepper) Section.

On the right-hand column of the doorway, a Magyar countryman from the environs of Szeged ; and on the left-hand a young Magyar woman from the environs of Kalocsa, in original folk-costume : representing the districts where the world-famed

Hungarian paprika is grown. (Under the existing laws it is forbidden to cultivate the world-famed Hungarian paprika in any other districts of Hungary).

When we enter the room, the whole history of the Hungarian paprika, from its cultivation as a plant, through the processes of harvesting, drying, stringing, preparation, grinding, State marking (cocketing) and every phase of packing, down to the ready export article, is shown partly by photographs, partly by paintings and diagrams.

On the table opposite the entrance may be seen an establishment — hotbed for rearing seedlings — belonging to a paprika farm in the environs of Kalocsa **(1)**. Beside the same, a seedling rearing establishment in the environs of Szeged (cold forcing) **(2)**. Next to the seedling beds may be seen the various kinds of tilling implements used in the cultivation of paprika **(3)**. Also exhibits demonstrating the preparation and stamping of dried and dressed paprika **(4)**. On the left-hand side of the front part of the hall may be seen, in open sacks, the half-finished product (paprika) prepared por grinding **(5)**; then saks closed in advance, with the ready milling products **(6)**, and finally, paprika-sacks provided with State cockets certifying quality and ready for export **(7)**.

On the table under the window may be seen the model of a paprika mill, fully equipped with artificial drying room and seed-cleansing apparatus, women in the courtyard engaged in slitting the paprika, natural paprika drier, seed-drying on covered roof, etc. **(8)**. On the same table has been placed also model of State laboratory for determining the quality of the paprika **(9)**; next to the same, model of a Danube mill from the environs of Kalocsa **(10)**. The carefully prepared half-finished product (paprika), freed from its sharp pungent taste, seed-vessel and defective parts, after being subjected to a sevenfold process of grinding, yields the world-famed «sweet» paprika. The products of the sevenfold process of grinding are also exhibited in boxes **(11)**. Also exhibits showing five qualities of paprika — in glasses — as established by the State organ controlling and certifying the product **(12)**.

Hungarian paprika contains five times as much «*C vitamin*» as lemons. This fact is shown demonstratively by the crystalloid C vitamin obtained from Hungarian paprika and exhibited in the glass cylinder placed on the board hung on the wall **(13)** and by the diagram **(14)** hung in the same place. The preparation **(15)** made from the C vitamin and used for medicinal purposes, as also the preserved paprika rich in C vitamin which may be used for seasoning food **(16)**, form other exhibits to be seen here. On the next table may be seen the parcels (packets), sacks and boxes certified and cocketed by the State **(17)**.

Leaving the room illustrating the production of paprika, we pass next to the section dealing with

XI. Cereals and Plant Improvement.

On the right wall are exhibits relating to *maize.* In addition to the maize plant itself, here may be seen coloured illustrations of the varieties of maize grown in Hungary, together with the variously shaped seeds. The maize-map exhibited here shows the variety of maize the cultivation of which is most rational in the several regions of Hungary. In addition to the chemical composition of maize and the data relating to its cultivation, three water-colours illustrate the more important moments of that cultivation. In the case standing next to the maize plant **(1)** may be seen a collection of various species of maize in tubes; and on the table **(2)**, in glass cylinders, their seeds.

On the wall next following, exhibits of, barley **(3)**; it is shown separately the plant itself, its chemical composition, data relating to cultivation, and inflorescence. In the case of barley water-colours show also objective investigations of the barley used in brewing.

To the left of the room, opposite the exhibits of barley we find the

beer industry

section.

On the principal wall: Manufacture of malt **(4)**, beer-brewing **(5)**: view of brewery of A. Dreher & Co. Ltd., Brewers **(6)**: Hungarian brewery in 1850 **(7)**.

Dioramas: Egyptian brewery **(8)**, Caucasian (Ostiak) brewery **(9)**, and medieval brewery **(10)**.

Models of malt kiln dating from 1850 **(11)**; of malt kiln dating from 1910 **(12)**; beer-brewing copper dating from 1850 **(13)** heated by direct contact with fire; beer-brewing copper dating from 1910 **(14)** heated by steam.

On the partition wall: Hungary's exports of malt in 1933 **(15)**; malt exports **(16)**; and samples of Hungarian barley and malt**(17)**.

On the columns: statistical map illustrating Hungarian beer industry in 1913 and 1933 respectively **(18)**.

In the stereoscope: transparencies of the Brewery belonging to A. Dreher & Co. Ltd., Brewers.

Follow the exhibits of oats **(19)** and rye **(20)**; in the case of rye two maps show the distribution by counties of the 5 most important cereals grown in Hungary and the average yield of each per cadastral yoke. On the tables standing in front of the above exhibits, specimens of seeds of the respective plants (oats, barley and rye), and in the wall-cases, semicircular in form, standing to the right and left of the barley exhibits may be seen specimens of the ears and seeds of those improved species of barley used for beer-brewing with which experiments were made in the years 1928 and 1929 by the Royal Hungarian Plant Improvement Institute **(21—22)**.

On the walls is exhibited also wheat, the most important plant grown in Hungary **(23)**. In addition to the water-colour illustrating this plant there may be seen enlarged photographs showing the various types of seeds of Hungarian wheat, as also the chemical composition of wheat, data relating, to its cultivation, its inflorescence ; and 2 diagrams illustrating the manuring of wheat, which diagrams demonstrate — on the basis of numerous experiments carried out all over the country — the effects of the several kinds of artificial fertilisers in enhancing the yield under the conditions prevailing in Hungary. To the right and left of the wheat, in semicircular show-cases **(24—25)**, may be seen illustrated the generic elements to be found in Hungarian wheat and specimens of the ears of improved varieties of Hungarian wheat. In the circular show-cases **(26—27)** in the centre of the room are exhibited the seeds of the several varieties of improved Hungarian wheat for the purpose of demonstrating the effect upon the seeds of one and the same variety by the various factors of cultivation. On the column **(28)** there are 24 water-colours : of these, four illustrate the preparation of the wheat seeds, four the more important moments of wheat-growing, the other eight showing the cultivation of the soil, fertilisation with stable-manure and the turning of the crop. On the centre wall of the doorway, leading to the plant improvement section, are water-colours illustrating the most important tares growing in wheat. In the cylinders in the front part of the room may be seen preparations in alcohol **(29)** showing the roots of a few important Hungarian plants. **(For the objects exhibited in the passage running parallel, see XIII. Plant Protection below, p. 22).**

On the table in the middle of the room **(30)** are exhibits dealing with *plant improvement.*

On the partition in the middle of the table, 14 pictures illustrating the inflorescence and fructification of the most important agricultural plants ; 6 pictures illustrating the processes of plant improvement ; and 10 pictures showing the methods of transmission of the qualities and peculiarities of plants.

On the surface of the table facing the windows, samples of seeds of Hungarian improved species of plants, together with characteristic parts of the same, grouped by improvement establishments. On the other side, exhibits showing the plant material of the Royal Hungarian Plant Improvement Institute ; exhibits showing hereditary character of wheat ears, together with typical shapes of ears of Magyaróvár rye.

On the wall between two columns in the centre of the room **(31)**, exhibits showing the results obtained by trial cultivations effected in large farming establishments with species of improved cereals grown by the Royal Hungarian Plant Improvement Institute ; the results of experiments carried out on small farms ; and the fluctuating variability of the hectoliter and thousand-grain weight of Hungarian wheat and barley.

On the table : specimens of ears of the varieties produced

by the Royal Hungarian Plant Improvement Institute in 1928 by crossing triticum vulgare and triticum turgidum mirabile.

The last of the plant-growing sections was that dealing with the cultivation of wheat. The first stage in the manufacture of wheat is that of threshing: that manufacture is demonstrated exhaustively in the next section.

XII. Manufacture of Wheat and Flour.

In the centre, model of an up-to-date threshing machine, in a glass case **(32)**. In the same case, two water-colours showing the methods of threshing in use prior to the invention of the threshing machine — viz. threshing with a flail and by horse power respectively.

A special miniature collection exhibits the various kinds of mills, viz. model of ancient stone roller **(33)**; model of dry (tread-) mill **(34)**; model of water (brook) mill **(35)**; model of old-fashioned windmill **(37)**; and model of an old (first Hungarian) roll **(38)**.

Next we find the Hungarian implements for testing the quality of flour (with the farinograph of *E. Hankóczy*) in the order of development, down to modern times **(39)**: and two sets of 8 water-colours each showing the development of the milling and baking industry respectively **(40)**.

The glass chest illustrates the Royal Hungarian Corn and Flour Experimental Station and its work **(41)**; while the diagram on the wall gives a summarised statement of the results of the Hungarian wheat cadaster investigations **(42)**: below the same, on 5 revolving plates, the yearly results of those investigations and an explanation of the same. On the same wall a graphic delineation of the headway made by improved Hungarian wheats and the yields of their crops ; also a map showing the distribution of quality observed during a period of 6 years.

Results of the action initiated by the Hungarian Ministry of Agriculture for the encouragement of a uniform cultivation of wheat between 1931 and 1933. In addition, exhibits demonstrating the methods and importance of the official marking of flour **(43)**.

Diagram of a mill **(44)** working on the «semi-high» milling system, showing both the process of grinding and the half-finished and ready products. Plan of a mill working on the «semi-high» milling system **(45)**; also plan of granary attached to such a mill. Plan of a mill working on the «high» milling system **(46)**. Demonstration of Hungarian origin of milling industry machinery in the form of designs of the original roll, plain bolter and apparatuses for cleaning semolina and middlings **(47)**.

In the following round room: in the lower parts of cases Nos. **2** and **3** (in the drawers) we find a collection — in phials — of wheat derived from the samples approved during the wheat cadaster investigations of the period between 1928 and 1933. On the upper shelves of show-cases Nos. **4** to **7**, samples of Hungarian wheat collected by Dr. *Thomas Kossutány* during the

period between 1900 and 1905; — referring to the average of 6 years. The data of the investigations relating to the same will be found in the graphic delineation placed on wall No. 8. In the same place will be found 4 maps showing the places where Kossutány collected his samples.

10—11. Exhibits showing the industries manufacturing flour, their demand for flour, and their products.

12—13. Diagrams demonstrating results of the wheat exhibition and competition arranged by Békés County in 1933; the prize-crowned varieties of wheat and data relating to the examination of the same.

The passages running past the plant-growing sections — as already explained — form a separate section, the numbering of which begins near the fodder plants group (p. 13.). In these passages is located the section dealing with

XIII. Plant Protection.

A.) *Pests, Diseases and Tares (Weeds) of Meadows and Pastures.* Large illustrations of the older methods of locust-extermination and the more important weeds. In glasses and boxes, Hungarian species of locusts and grasshoppers. In the small frames will be found weeds (tares) and models illustrating modern methods of locust extermination **(1)**, as also the extermination of «Camberwell beauties» and field mice **(2)**.

B.) *Pests and Diseases of Fodder Plants.* Four illustrations showing the use of insect-catching implements and the extermination of parasitic plants. In the boxes, exhibits of diseases and pests. Models demonstrating the catching of insects **(3)** and the extermination of dodder **(4)**.

C.) *Pests and Diseases of Mengel-wurzels and Sugar Beet.* Large illustrations showing the methods of insecticide: in glasses and boxes, pests and diseases. Models demonstrating the extermination of the beet-fly **(5)** and the ground fly **(6)**.

D.) *Pests and Diseases of Potatoes and Industrial Plants.* Large illustrations showing the methods of protection pests and diseases. In glasses, diseases of potatoes; in boxes animal pests: models demonstrating the extermination of the rape weevil **(7)**.

E.) *Pests and Diseases of Legumious Plants.* Large illustrations showing the extermination of pests, pathogenetic germs and weeds. In glasses and boxes, animal pests and diseases. Model showing method of sterilising (by fumigation) weevil-infected seeds **(8)**.

F.) *Pests and Diseases of Cereals.* In the wall-cupboard, in frames and on the table, exhibits of weeds (tares). In the boxes, pests and diseases in their natural form.

G.) *Pests injurious to Granaries.* In the wall-cupboard, the web of the corn weevil **(9)**; illustrations and exhibits in boxes showing the several pests and the manner of protection againts them.

H.) *Impregnation of Seeds* shown in pictures and by models.

I.) *Fungicides and Insecticides*: *Statistics relating to Plant Hygiene.* Two large cases **(10, 11)** containing specimens of all fungicides and insecticides officially approved; in the small cupboard **(12, 13)**, insecticides and fungicides used for industrial and other purposes. Transparencies placed on revolving frames display the havoc wrought by pests and by diseases.

The section dealing with the manufacture of cereals is followed by the section concerned with

XIV. Agricultural Experimental Stations.

each of which has a special show-case of its own.

In the upper part of each case, vertically placed, is a view of the respective institute and illustrations (pictures, photographs, transparencies) explaining its more important work. Below will be seen the title of the institute and a short description — in Hungarian, French and German — of its objects.

Below the plane on which are demonstrated the tasks of the institute will be found an album — contained in two caskets — with descriptive material (diagrams, photographs) relating to the history, activity, sphere of activity, budget, receipts and expenditure and personnel etc. of the same.

On the table-leaves of the cases covered with glass caskets and in the three, glass-covered drawers of the tables will be found natural objects, instruments, models and illustrations offering information concerning the activity, tasks etc. of the respective institute.

To the left of the door of the Cereals Section room opening on the passage, beside the wall, we find the show-case demonstrating the activity of the Royal Hungarian Corn and Flour Experimental Station.

Of the other parts of this section — that dealing with agricultural experimental and other scientific institutes and offices — wen shall find on both sides of the entrance to the room opening on the left at the end of the passage:

2. and 3. the Royal Hungarian Plant Cultivation Office.

In the room opening on the left (XIV. a.) are located the exhibits of:

4. the Royal Hungarian Plant Protection and Trading Office (Budapest, Kossuth Lajos-tér 11),

5. the Royal Hungarian Forestry Research Institute (Sopron),

6. the Royal Hungarian Experimental Station for Fish Biology and Drain Cleansing (Budapest, II., Hermann Ottó-út 15.)

7. the Royal Hungarian Sericicultural Experimental Station (Szekszárd),

8. the Royal Hungarian Agricultural Machinery Testing Station (Magyaróvár).

On the wall opposite we find

9. the Royal Hungarian Dairy Products Control Station (Budapest, IX., Bakáts-utca 8),

10. the Chemical Testing (Investigation) Stations functioning under Act XLVI. of 1895,

11. the Royal Hungarian Veterinary Institute (Budapest, VII., Tábornok-utca 2).

On leaving the room, on the wall facing the door we find:

12. the Royal Hungarian Agrimonial Institute (Budapest, V., Kossuth Lajos-tér 11).

Next to the same will be found:

13. the Royal Hungarian Institute of Geology (Budapest, VII., Stefánia-út 14).

To the right:

14. the Royal Hungarian Institute of Meteorology and Terrestrial Magnetism (Budapest, II., Kitaibel Pál-utca 1).

In the passage we find in succession:

15. the Royal Hungarian Plant Cultivation Experimental Station (Magyaróvár),

16. the Royal Hungarian Plant Improvement Institute (Magyaróvár),

17. the Royal Hungarian Seed Testing Station (Budapest, II., Kis Rókus-utca 15),

18. the Szeged Plant Cultivation Experimental Station,

19. the Szeged Soil Science and Agrochemical Institute,

20. the Szeged Hemp and Flax Cultivation and Vegetable Oil Experimental Station,

21. the Szeged Agricultural Chemistry and Paprika Experimental Station,

22. the Royal Hungarian Agricultural Chemistry and Paprika Experimental Station, Kalocsa,

23. the Royal Hungarian Tobacco Experimental Station (Debrecen, Pallag-puszta),

24. the Royal Hungarian Medicinal Plant Experimental Station (Budapest, II., Herman Ottó-út 15),

25. the Royal Hungarian Plant Protection Research Institute (Budapest, II., Herman Ottó-út 15),

26. the Royal Hungarian Institute of Ornithology (Budapest, II., Herman Ottó-út 15),

27. the Royal Hungarian Ampelological and Viticultural Institute (Budapest, II., Herman Ottó-út 15),

28. the Royal Hungarian Institute of Zymology (Budapest, II., Herman Ottó-út 15),

29. the Royal Hungarian Agricultural Chemistry and Milk Testing Station (Magyaróvár),

30. the Royal Hungarian Wool Testing Institute (Budapest, II., Kitaibel Pál-utca 1),

31. the Royal Hungarian Experimental Station for Animal Physiology and Forage (Budapest, II., Kitaibel Pál-utca 4).

The exhibits placed on the side of the passage near the wind-

ows illustrate the problems arising in connection with the carrying into effect of Act XLVI. of 1895 dealing with the prohibitions relating to the adulteration and counterfeiting of agrarian produce and agricultural products and articles.

Leaving the room containing exhibits dealing with the manufacture of cereals, we find in the lower part **(32)** of the show-case on the right exhibits showing the methods of taking samples, the packing of samples etc., and in the upper part **(33)** exhibits showing the materials used in agricultural operations and the commonest counterfeit imitations. On the small table we find Acts of Parliament, Orders in Council (Ordinances) decisions in matters of principle, and procès verbals (minutes) relating to the taking of samples. On the wall, the administrative authorities of first instance and the spheres of jurisdiction of the same **(34)**, also illustrations of correct and incorrect methods of taking samples**(35)**.

In the lower part **(36)** of the next show-case are exhibited the methods of investigation of the laboratories ; in the upper part **(37)**, articles of food which are animal products, together with the commonest counterfeit imitations of the same. Beside the next wall stands a small table with delineation of laboratory **(38)**. On the wall itself two tables showing the distribution by districts of the chemical testing stations **(39)** and the methods of protection at the disposal of careful producers and traders to prevent them coming into conflict with the law **(40)**.

In the show case below the window **(41)** are exhibit showing the commonest counterfeit imitations of articles of foods of vegetable origin. On the table beside the wall statistics relating to the activity of the chemical testing stations, and a collection comprising a few findings **(42)**. On the wall, the administrative authorities of second instance, the spheres of jurisdiction of the same **(43)**, and the methods of investigation of laboratories **(44)**.

In the last show-case, below **(45)**, the method of procedure in cases of petty offences ; above **(46)**, articles of consumption, beverages, commodities, and the commomest counterfeit imitations of the same. On the windows, decorative transparencies illustrative of the respective subject.

Reaching the big hall and turning to the left, the following department is to be found in the glass hall.

XV. Agricultural implements.

In the show-case situated along the wall at the left there are models demonstrating the development of the ploughs groupped as per countries and parts of the world. On the stands in front of the wall and in front of the stands are placed the old-fashioned wooden and iron ploughs. Right opposite various agricultural implements can be seen such as hand and team cultivators, rollers, disc-harrows, smooth rollers, tractor ploughs and disc ploughs.

In the centre of the room drills, fertilisers, two row corn-

planters are standing and past these, (at the right) are several selecting machines (Selector Minor, Columbia, trieurs, selecting machines, dippers and mowers.).

In front of the screen dividing the grated iron pillars are the feed grinders and cutters (stalk cutters, hushers and shredders for hand and power drive, cutters and sheller).

Separately, at the farthest end of the room, tractors are placed on stands and drawings of tractors hung against the wall.

In the show cases placed on four pillars models of agricultural implements and on the grated iron pillars agricultural hand tools are shown.

In the corridor behind the pillars, an old-fashioned steam engine, an old drill machine, a set of thershing machines, chain- and draw well, whilst on the stands along the corridor wall models of farm wagons and sledges may be seen.

In the part of the room to the right of the machinery hall are the exhibits of the next section:

XVI. Agricultural Buildings; Labour Conditions.

On the walls and the two centre pillars, exhibits illustrating Hungarian agricultural architecture, and land allotment in Hungary; ground plans of the various grange systems of medium estates and latifundia, and of villages and homesteads. Village peasant houses; dwellings of agricultural labourers. Barns, granaries, maize sheds, lofts, tobacco sheds pig-pens and equipment of same. Dung-yards. Graphic demonstration of the importance of these objects in the management of a farm.

Round the pillars: — models of the typical farm-buildings of mediumsized estates and latifundia.

On the wall opposite: — erection of small village dwellings. Activity of National Agricultural Labourers Relief Fund.

Diagrams on the right-hand partition wall exhibit tables of the *National Agricultural Labourers Relief Fund*, the insurance institute of agricultural labourers, these tables showing on the one hand the activity of the Fund during a period of thirty years and on the other the statistical data referring to the various accidents occurring in the several branches of agricultural labour or caused by agricultural machinery.

* * *

The maps and statements to be found in the two ornamental show-cases placed in the principal entrance hall supply information respecting a few statistical questions of a general character. Here may be seen:

On the front side of frame No. 1 (above), the distribution of the territory of Hungary in the year 1933 by categories (size) of estates or holdings (ownership); and below, the distribution of the territory of Hungary in the year 1933 according to extent of the areas of the farming establishments (operations).

On the other side of this frame, (above), the distribution of the territories of the several countries of Europe in the year 1933 by categories (size) of estates or holdings : below, comparative survey of the distribution of the territory of Hungary by categories (size) of estates or holdings in the years 1914 and 1933 respectively.

On the front side of frame No. 2, distribution of the territory of Hungary by branches of cultivation in the years 1914 and 1933 respectively. On the other side, distribution of the territories of the various countries in the world in the year 1933 by branches of cultivation.

Passing on along the right-hand passage next the principal staircase we reach the Statistical Section proper.

A/ B/ General Statistics; Representative Associations.

1. Two maps show the density of population of Hungary : that on the left shows the absolute density, that on the right the density in relation to the arable land.

The table to be seen below shows the distribution of the population of Hungary by occupations.

2. Two maps and eight tables show the results brought by about by the land reform carried out between 1921 and 1932 and the granting of holdings effected in connection with the Order of Military Knights.

3. Three tables show the prices of arable land, the rents of leaseholds and the prices of produce as from the year 1924.

4. Two maps and two diagrams show the organisation of the agrarian intelligence service and of the service of agricultural inspectors.

On the other walls are to be found exhibits illustrative of *Representative Associations* and *Agrarian Credit Organisations.*

The general statistical data are followed by the material relating to the *Villagers Union.* On the partition wall, side by side, we find the *Association of Hungarian Farmers* and the *Chambers of Agriculture.* On the partition wall of the «crystal hall», in succession : *Land Mortgage Institute*, *Central Hungarian Credit Cooperative Society*, *Hungarian Small Holders Cooperative Society*, *and the «Altruist Bank».*

In the «crystal hall» beside the statistics section will be found the

C/ Permanent Agrarian Export Exhibition.

Objects of the exhibition : — to show foreign inquirers the development of Hungary's agrarian export trade, the organisation of the Royal Hungarian Foreign Trade Institute and its connection with the development of our export trade, the eminent quality of the Hungarian agrarian exports, and finally to offer Hungarian farmers advice in respect of suitable handling and packing of export articles.

To facilitate a comprehensive survey ot the several diagrams and show-cases, the same have been numbered as follows :

1. Organisation of Royal Hungarian Foreign Trade Institute.

2. Inland network of organs of control and information of the Royal Hungarian Foreign Trade Institute.

3. Agrarian articles of export checked in respect of quality by the Royal Hungarian Foreign Trade Institute, and the principal moments of quality control.

4. Survey of Hungarian State system of marking (certifying) quality. The table shows the principal requirements essential to obtain certification, the marks (certificates), and the State organ responsible for the work of marking (certifying).

5. Hungary's foreign trade, exports and imports — values in pengő, — during recent years.

6. Hungary's trade balance, also the balances of her trade with the several States, during the last two years.

7. Relation between Hungary's agrarian exports and agrarian imports and industrial exports and imports respectively.

8. Distribution of Hungary's foreign trade by categories of articles (raw product, half-finished goods, manufactures).

9. Hungarian flax and hemp export goods.

10. Species of barley grown in Hungary, by districts of cultivation ; malt.

11. Broom and reeds.

12. Hungary's agrarian exports in recent years, according to principal categories of export goods.

13. Hungary's agrarian export trade in recent years, by groups of products.

14. Data referring to Hungary's agrarian exports and industrial imports, grouped by principal European countries.

15. Hungary's climatic position in Europe, which renders possible the production of agrarian produce of excellent quality. (Continental climate effects as drafted by Count Paul Teleki and Zoltán Nagy).

16. Monthly returns showing development of export trade in principal agrarian products (displayed by revolving mechanism).

17. Hungary's climatic position in Europe (ocean climate effects as drafted by Count Paul Teleki and Zoltán Nagy).

(On the sill below Nos. 15, 16 and 17, are placed the most important publications of the Foreign Trade Institute).

18. Distribution over the world of Hungarian agrarian exports.

19. Sugar products.

20. Varieties of Hungarian honey, with data relating to quality.

21. Tomato products for export purposes. Data relating to the quality of Hungarian tomatoes.

22. Data relating to London Wheat Convention.

23. Amounts of wheat required by European importing States and wheat surpluses of Hungarian exporting States.

24. Annual ratio (%) of wheat exports to total quantity of crop.

25. International wheat balance.

26. Hungary's wine exports to European countries, grouped by districts of production.

27. Foreign markets of Hungarian seeds.

28. Special qualities of Hungarian agrarian exports : *a)* proportion of vitamin contained in fruits and seasonal articles ; *b)* nutritive power of fruits and seasonal articles.

29. Quality of Hungarian lard and butter.

30. Illuminated map showing Hungary's agrarian exports to European countries in 1933, grouped by countries and articles.

31. Hungarian game and fish exports.

32. Photographs of Hungarian breeds of sheep. Wool yield.

33. Hungarian breeds of horned cattle. More important data relating to breeding and milk production.

34. Horses.

35. Data of importance in connection with export trade relating to the slaughter, fattening and propagation of Hungarian breed (Mangalica) of pigs.

36. Quality of wheat and wheat flour.

37. Most important Hungarian export seeds.

38. Exhibits showing paprika (red pepper) and medicinal plant exports.

39. Exhibits showing Hungarian export tobacco and tobacco products.

40. Data relating to quality of Hungarian onions and potatoes and to export trade in these articles.

41. Kinds of fruit exported by Hungary.

42. Hungarian dairy products and butter exports.

43. Data relating to Hungarian wine exports.

44. Quality of fatted and other poultry exported by Hungary.

45. Quality of Hungarian export eggs and feathers.

46. Preserved meats exported by Hungary.

47. Hungarian hair products.

48. Varieties of Hungarian wool.

49. Data relating to Hungarian salami (polony : Bologna sausage) and bacon : with models of export commodities.

* * *

By the main stair we reache the first floor. The entrance is faced by the to called «king's room» with the bust King Francis Joseph I.

Proceeding right-hand in the opposite direction we pass the great hall decorated with the busts of Queen Elizabeth, Count István Széchenyi and count Sándor Károlyi.

In the large passages on the first floor will be found the next section :

XVII. Agricultural Education.

In the left-hand passage (standing opposite the window) we see before us the exhibits of

1. *Forestry Engineering Department of the Royal Hungarian Mining and Forestry* (Sopron).

On the wall, principal building of the College ; various diagrams and maps. *On the table*, album containing photographs and statistical data illustrating the life of the College ; and on the first window, transparencies of the College and of the work being done there.

2. *Agricultural Department of Budapest Royal Hungarian Faculty of Economics* (Budapest).

On the wall, building of agricultural department of the Faculty; *on the table*, album containing photographs and statistical data. On the window opposite, transparencies showing the work done by the Department.

3. *Royal Hungarian Veterinary College* (Budapest).

On the wall, principal building of the College ; maps and diagrams. *On the table*, photographs and statistical data illustrating the life of the College. On the third window, transparencies showing details of the life and work of the College.

4. *Royal Hungarian Academies of the Agriculture* (Debrecen, Keszthely, Magyaróvár).

On the wall, principal buildings of the Academies ; diagrams, pictures and statistical data. *On the table*, photographs and statistical data ilustrating the life of the Academies. On the last window, trasparencies illustrating the Academies.

On the staircase window : 1. Transparencies illustrating horticultural education (Budapest Royal Hungarian School of Horticulture ; Royal Hungarian School for Training of Gardeners, Baja ; Budapest Municipal School for Training of Gardeners ; School for Training of Horticultural Labourers, Kecskemét).

2. Royal Hungarian «Samuel Tessedik» Higher Agricultural School, Szarvas ; Royal Hungarian Training Institute for Agricultural School Teachers, Kecskemét ; Royal Hungarian Higher Agricultural School for Girls, Putnok ; Royal Hungarian Vocational School for Milk Production, Csermajor.

3. Transparencies illustrating vocational in viticulture and viniculture (Royal Hungarian Advanced Course in Viticulture and Viniculture, Budapest ; Vocational Schools of Viticulture and Viniculture, Eger, Kecskemét, Sopron and Tarcal ; Vocational School for Cellarers, Budafok).

Running along the whole length of the wall of the right-hand passage, illustration summarising agricultural education in Hungary : 1. division of agricultural education into agricultural proper, horticultural, poultry farming, forestry, household economy, and dairy farming instruction, the illustration showing also the «pedigrees» of the institutes serving the several branches of agricultural education.

2. Hungarian institutions of agricultural vocational education shown by places where they are located (map).

3. Position of Hungarian agricultural vocational education in pre-War and post-War times (map).

4. Places where Hungarian Winter Courses in Agriculture are held ; number of the same, and number of persons attending.

5. Places where Hungarian Itinerant Courses in Household Economy are held ; their number, and number of persons attending.

6. Distribution of People's Libraries given by the Hungarian Ministry of Agriculture.

7. Extra-mural Lectures in Agriculture delivered by Teachers employed by the Institutions of Agricultural Vocational Education. (map)

8. Distribution of improved seeds from the model farms attached to the Institutions of Agricultural Vocational Education (map).

9. Distribution of breeding stock reared in the model farms attached to the Institutions of Agricultural Vocational Education (map).

On the *first* of the windows opposite, transparencies illustrating the work being done in the Royal Hungarian Agricultural Vocational Schools. On the *second*, transparencies illustrating the life of winter agricultural schools, as also of the itinerant courses in household economy. On the *third*, illustrations of the poultry farm at Gödöllő, the bee-farm at Gödöllő, and of the work being done in the Schools for Foresters and Gamekeepers at Esztergom and Szegedkirályhalom. On the *last* window, photographs illustrating the work being done in the Royal Hungarian Higher Agricultural Schools at Békéscsaba and Orosháza, the Budapest Municipal Higher Agricultural School, the Roman Catholic Higher Agricultural School at Gyöngyös, the Budapest Municipal Higher Agricultural and Household Economy School for Girls, the Hungarian Women's Training College founded by Charles Amizoni, and in the Farmers Training School at Örkény maintained by the Order of Military Knights. *On the tables*, specimen certificates and school reports and various informative printed mater.

Turning to the left out of the passage with the exhibits of higher agricultural education, we come to the next two sections:

XVIII. Viniculture and XIX. Viticulture.

On the stand beside the left-hand wall, models of vine-stems (1) ; to the right and left of same, on metal stands, two vine roots. The huge map (scale of 1 : 150.000) placed on the wall shows the distribution of the vine-growing territory of Hungary (the vineyards are shown by green spots of various sizes, the vineyards of an area exceeding 100 cadastral yokes being marked by spots 10 millimetres in diameter. The number of inhabitans is shown by yellow

squares of varying sizes. Variously coloured fields show the several counties ; and suitable sings are employed to denote the organs of the viticultural administration and the seats of vocational education in viticulture and viniculture and of public cellars and mountain parish councils).

To the right of the entrance, on a table (2), various machines, implements and apparatuses used by wine-growers. On the other tables : model of cellars of the royal domain at Ráckeve (3), model of a cellar (4), model of a fermenting house (5), and model of a press-house (6). — Beside the window, a Seitz filter (7), a hydraulic press (8) and other filters.

On the walls are table — viz. export trade in viticultural and vinicultural articles during recent years (9); the economic and social importance in Hungary of viticulture (10); and the Royal Hungarian wine-cellars (11). In the show-case on the left, collection of various kinds of vinicultural products (12), small implements used by winegrowers (13), instruments for grafting and lopping (14) and models of grafters (15). In the upper part, collection of bottles and glasses. In the show-case on the right, microphotographs (16), collection of pure yeasts (17), implements used for analysing wine (18), and the fining, bleaching and deacidifying materials used by wine-growers (19). In the upper, part, water noggins and various untesils for holding wine.

In one of the large show-cases (20), American layers, European shoots and suckers, and various models (storage of grapes, packing of dessert grapes, forcing of graftlings, packing of stems for export) : in the other show-case (21), vinicultural by-products, model demonstrating vine hybridisation, and models of various types of grape-flowers and stigmas. In the window-recess, enlarged model of the phylloxera (22). To the left of the latter, in flabelliform frame, tables showing diseases of the wine; above this, graphic delineation showing the composition of Hungarian white and red wines and of the Tokay district wines, as also their minimum and maximum values (23). In the flabelliform frame on the right, pressed leaves of different varieties of vine layers ; above the same, graphic illustration of the chemical composition of the natural sweet wines of Hungary, from the point of view of nutritive power and medicinal effects (24). On the wall of the window-recess, in boxes, collection of insects.

On the shelves of the tower-shaped stand on the left (25), preparations of dessert and stoneless grapes, together with pressed of the several varieties of dessert grapes. On the tower-shaped stand on the right (26), preparations of wine grapes and pressed leaves of varieties of grapes yielding white wine.

On the wall beside the tower-shaped stand, in a flabelliform frame, paintings illustrating viniculture (parts of vine stem, sizing, fixing of sand turning of the soil, planting of shoots, propping, horizontal building, preliminary training of graftlings, etc.) ; above the same, exhibits showing the average quality of the wine crop and its colour, by hundreds (ridings) (27) (the white, claret-

coloured and red wines respectively are denoted by yellow, pink and dark red fields respectively, the quality being shown by the shade of the colour used). On the table left of the flabelliform frame (**28**), viticultural implements (syringes, sprinklers, sprays fumigators).

In the show-case on the left next to the tower-shaped stand (**29**), collection of soils, collection of manures (fertilisers), and model of a wine-growing establishment (delineating a lowland model vineyard consisting partly of sand and partly of knit soil, and a mountain or hilly model vineyard situated on knit soil. Scale 1 : 35). In the show-case on the right (**30**), vegetable and animal pests injurious to the vine, physiological diseases, abnormities of development, and collection of materials for the protection of vines.

The next section is that of

XX. Horticulture.

In the large show-case on the left (**31**), models of various fruits : in the show-case above, models of form trees. On the table beside the wall, implements for tilling the soil. On the wall, plans and photographs of house garden, villa garden, town tree plantantion.

On the stand (**32**) on the left, models showing regulation packing of apples and pears respectively.

The models placed on the left side (**33**) exhibit an orchard showing close plantation (apple trees interspaced with plum trees) ; the figures are engaged in the winter work of lopping the crowns of the trees (**33**); employment of pump- and bucket wells in the cultivation of vegetables (**34**); open plantation in an orchard with the usual interspaced agricultural cultivation (the figures are engaged in the summer work of hoeing) (**35**).

In the show-case next to the wall (**36**), vegetable and ornamental plant seeds ; implements for treating plants.

On the wall : map showing the fruit-growing circuits.

In the next show-case next to the wall, ornamental plant seeds.

In the large show-case (**36**), in front, collection of walnut, almond, hazel-nut seeds and layer seeds ; at the bask, models of the commonest varieties of vegetables : in the upper part, models of wild trees.

On the wall, exhibit showing yield orchard 1 cadastral yoke in area with the full crop (**37**).

In the upper part, of the next case models of wild trees. On the stand : regulation packing utensils. Models showing the employment of hydraulic wheel in the cultivation of vegetables (**39**); suitable method of planting hilly ground (**40**); and the employment in the cultivation of vegetables of the «paternoster» type of hydraulic wheel.

In the next large show-case **(41)**, models of the more frequent kinds of vegetables. In the upper part, models of wild trees.

On the table next the wall, implements for treatment of fruits and vegetables.

On the right have been placed also garden pests.

Illustrations showing the employment of raw nicotine ; havoc wrought by animals in fruit-tress ; in boxes, pests and diseases of orchards and kitchen-gardens.

Models exhibiting the various implements and methods of fruit-tree protection.

With the horticultural section is connected the

XXI. Preserves and Fruit Spirit.

section.

In the large case we find the collection of preserves **(42)**. On the walls, diagram showing manufacture of tomato catsup **(43)**, statistics relating to manufacture of fruit spirit **(44)**, and diagram illustrating manufacture of fruit spirit **(45)**.

On the table : model of preserve factory **(46)**,

The Preserves Industry saction is followed by the

XXII. Apiculture.

section.

In the show-cases : apicultural products **(1)**, Hungarian acacia honey, honey in the comb, honey products, nectariferous plants, and enemies of bees **(2)**. On the tops of the show-cases may be seen apicultural preparations and the birds which prey on bees. In show-case No. 3, honey products.

Passing to the right, on the walls we see photographs of various apiaries, tinned preparations, a collection of bees, and a collection of bee-keeping implements. In the case built into the wall **(4)**, the enemies of bees may be seen, together with various technical publications. And on the walls have been placed a map showing the hygienic conditions of bee-keeping establishments **(5)** and two diagrams showing the apicultural conditions prevailing in Hungary.

Along the balustrade of the stairs have been placed various types of hives and apicultural implements.

The section next to that of Apiculture is

XXIII. Sericiculture.

In the smaller square (pyramidal) show-cases : Hungarian silk embroideries **(1)**; Hungarian silk thread and silk waste, as well as the species of cocoons bred on a large scale in Hungary **(2)**. In the large octagonal show-case **(3)**, Hungarian silk fabrics. In the show-case next to the wall **(4)**, silkworms in various stages of development, also cocoonery. In the show-cases next to the

windows, anatomical reproductions of the silk worm **(5)** and the bombycid moth **(6)**. In the long show-case placed against the wall **(7)**, miniature reproduction of the mulberry tree, breeding establishment, cocoon purchase office, materials for the treatment of classified cocoons and eggs.

On the walls will be found the illustrations and diagrams relating to sericiculture in Hungary, viz. portrait of Paul Bezerédy, organiser of modern sericiculture **(8)**, the organisation of silkworm breeding **(9)**, the distribution by counties of cocoon yield, the Szekszárd station for the testing of eggs and its equipment **(10)**, statistical data relating to the development of sericiculture, silkworm breeding and destruction of cocoons **(11)**, Hungary's silk imports and exports **(12)**, treatment of silkworm eggs **(13)**, position of Hungarian sericiculture prior to and subsequent to 1914 **(14)**, cultivation and pruning «stopping» of the mulberry tree **(15)**, the development of the silk cocoon during a period of 32 days **(16)**, and the number of silkworm-breeders and the quantity of cocoons in the period from 1919 to 1933 **(17)**.

In the side-passage on the left we find

XXIV. Breeding of Poultry, Pigeons and Rabbits.

In show-case No. **1**, various Hungarian breeds of hens (speckled, yellow white, partidge-coloured and bare-necked); white and partridge-coloured American leghorns. Below, short description of the animals (birds) and eggs of the birds grouped by colours. In show-case No. **2**, groups of Rhode Island, Red, White Wyandotte, speckled Plymouth, Barneveld and Orpington hens; below, short description of the animals (birds), and eggs of the several species. In show-case No. **3**, groups of bronze, white, black **4**, Hungarian and Emden geese; group of Hungarian, and copper turkeys and guinea-fowls. In stow case No. Peking, Roues, Indian white, and Chaky Campbell ducks.

On the walls and columns and at the foot of the same, as also in glass cases, pictures relating to poultry breeding, statuary statistical data and various implements etc. used by poultry-breeders (incubators, artificial feeders, feeding and watering utensils, specimen roosts).

On the stand on the left-hand wall, stuffed specimes of species of rabbits; on the stand on the right-hand wall, stuffed specimens of various species of pigeons.

XXV. Pig-Breeding.

In show-case No. **18**, figures of pigs for breeding («mangalica», Yorkshire, Berkshire boars and sows); below, photographs of pigs and books and other publications dealing with pig-breeding. The models exhibit the farrowing stable of the domain of the

landowner Baron Imre Biedermann at Szentegót **(19)**, the Nagytétény establishment of the Hungarian Pig-fattening and Meat Industry Co. Ltd. **(20)**, and the pig-breeding establishment for rearing Yorkshire pigs of the Nagyesztergár (Veszprém County), domain of Paul Purgly de Jószász **(21)**.

On the right-hand wall, light-coloured «mangalica» boar (pedigree animal) bred on the domain of the Bishop of Szatmár at Pusztahidvég **(22)**; «Harding» Yorkshire boar (pedigree animal) bred from imported (English) parent animals by the lessee of the Kisszállás domain **(23)**; Berkshire boar **(24)** bred from imported parent animals; «Jurkó», two year-old pedigree Yorkshire sow with 16 dugs possessing exceptional littering capacity **(25)**; Yorkshire sow imported from England (pedigree animal) possessing exceptional littering capacity **(26)**; «Albina», pedigree «mangalica» sow possessing exceptional littering capacity **(27)**; prime fatted «mangalica» hogs 16 months old, each weighing 220 kilogrammes **(28)**.

The plastic relief (dating from 1934) illustrates the revival of breeding of pigs for breeding purposes consequent on the headway made by the industry producing first-class Hungarian hams. So-called «baris» pigs bred by crossing «mangalica» and Berkshire breeds **(29)**.

On the left-hand wall, exhibits illustrating the activitiy of the National Association of «Mangalica» Pig-Breeders and the results of the same **(30)**; the pig-breeding activity of the National Association of Breeders of Butchers'-Hogs and the results of the same **(31)**; headway made by breeding of meat-hogs in Hungary and the consequent decrease of imports of smoked meat **(32)**.

When we enter the next section:

XXVI. Horse-Breeding,

we see in the first three recesses on the left grouped exhibits showing the State stud-farms; and in the fourth exhibits showing Hungarian horse-breeding: there are oil-paintings and models illustrating the past, while photographs, maps and diagrams show the present position of Hungarian horse-breeding. In the centre of the room stands a county four-in-hand harnessed in the Hungarian manner; in the show-cases, models of famous horses. On small tables round the show-cases and on the windows, old photographs of horses; while the medals (prizes won at world exhibitions) call our attention to the glorious past of Hungarian horse-breeding. The other pictures scattered over the room illustrate the private studs which have contributed to make the reputation of the «Hungarian horse» familiar all over the world.

First of all mention must be made of the portraits of our late *King*, *Francis Joseph* I. **(1)** and of the late *Queen Elisabeth* **(2)** — both on horseback — and of the photographs taken of Their Majesties. The pictures displaying the feats of horsemanship of Count *Maurice Sándor* **(3)** and showing *Count Starhemberg* on his steed

«Athos» **(4)**, etc. throw into relief the gifts of the Hungarian nation as horsemen ; and finally, on the right-hand wall of the room, a bust of Kozma reflects our homage to the founder of Hungarian horse-breeding.

The big oil painting is the work of the painter Juszkó and represents an episode of the life of the «Csikós»'s.

In the small room next to the Horse-Breeding Section we find the :

XXVII. Veterinary Administration.

On the walls, pictures demonstrating the manner in which certain, important infectious diseases of animals spread, the special diagnostical methods employed to ascertain their presence, and statistical tables showing the spread of infectious diseases and the means of intervention to check them. Photographs of buildings and equipment of slaughter-houses in Budapest and in few provincial towns.

Maps and statements relating to the organisation of Hungar an veterinary administration **(1)** and to the number and distribution of veterinary surgeons **(2)**.

In cases and on stands, preparations of morbid anatomy showing the typical pathological changes produced by certain infectious diseases of animals ; cultures and photographs (enlarged on a scale of 1 : 5000) of germs producing infectious diseases of animals **(3)** ; a few typical examples showing serological methods **(4)** ; preparations (serums) made by Hungaria serum-laboratories **(5)**.

On the window, transparencies showing buildings of the Royal Hungarian Veterinary Institute and the equipment of its laboratories.

In the front part of the next room we find :

XXVIII. Breeding of Horned Cattle.

On separate stands : «Rátót I.», Simmenthal bull **(B)**, «Rátót I.», Simmenthal bull **(C)**, and Simmenthal bull from Bábolna **(D)**.

In a case next to the left-hand wall **(1)**, model of dun cow. dun and small cow, Montafon cow, Oberinnthal cow, Allgau pedigree bull and Allgau cow. On the opposite wall, also in a case **(2)**, Oberinnthal bull, Pinzgau bull, Pinzgau cow, and buffalo cow. (in the lower part of the case, diplomas and medals used as prizes for breeding animals).

In the left-hand case **(3)**, pare Simmenthal cows and bulls, from the breeding establishments at Rátót, Bábolna and Mezőhegyes ; in the right-hand case **(4)**, Simmenthal cows and bull, and model of the famous cow. «Cepedli».

In cases Nos. **5** and **6**, models of horned cattle of the Hungarian and Transylvanian types.

In the next case (7) have been placed the red-pied Hungarian cows from the districts of Bonyhád, Moson and Sopron. To the right (in case No. 8) are to be the Counties of Nógrád and Vas. In the centre, Mezőhegyes double yoke of oxen drawing a plough. In the cases in front of the right-hand windows, medals and plaques used as prizes for breeding animals, and books dealing with cattle breeding. In the small case on the left, printed matter for pedigrees and judging, and on the stands, album of photographs of the animals which obtained prizes and the National Cattle Show held in Budapest in 1909.

On the walls, oil paintings, photographs and various tables (number of horned cattle, milk control, pedigree-tables).

In the middle of the room we find the:

XXIX. Sheep Breeding.

The top part of the right-hand window-recess is occupied by a picture portraying an Alpine (Carpathian) sheep pasture. Below the same is a map, on which the density of the coloured spots denotes the number of sheep bred per unit of territory in the several counties. In the upper part of the map may be seen all the various species of sheep bred in Hungary, the coloured paper disc below the illustration of each species denotes the ratio of that species in the total stock of sheep in the country. In the glass-case standing to the left of the map (9) may be seen the transformation of wool from the greasy fleece to the finished fabric; on that to the left (10), furriery made from lamb-skin. To the right and left of the glass-cases, on stands on the wall, will be seen figures of sheep and types of wool.

On the opposite side of the room is a long show-case with life-like figures of the species of sheep bred in Hungary and samples of the wool characteristic of these species.

The last of the groups on the first floor is the:

XXX. Dairy.

On a raised platform in the centre of the room is a group of models of machines illustrating the production, collection and manufacture of milk (in the latter group, buttermaking, cheese-making, preparation of bottled milk). The arrangement of the machines is such as to demonstrate also the whole course of milk production, milk collection, making of butter and cheese, and preparation of bottled milk.

The illustrations and photographs on the wall on the right demonstrate the treatment of milk in the town dairy establishments, from the taking over of the milk to the sale of milk. In the show-case (11) may be seen the various categories of milk, methods of packing the same, the microflora of milk, and investigation implements.

In the next recess on the right, the illustrations delineate the methods of collecting milk and the various systems of delivery. In the show-case in front of the wall **(12)**, the injurious milk microbes, their cultures, types of milk transformed through the influence of the injurious flora, investigation implements and instruments.

In the second recess on the right-hand side of the room, pictures showing milk production. Besides showing a small dairy farm; these exhibits demonstrate modern hygienic milk production. In the show-case, in pots, exhibits demonstrating the microbiology of correct and incorrect production of milk: here will be found also exhibits illustrating the chemical and bacteriological control of dairy farms, together with the implements for use in the investigations.

On the left-hand side of the room, the pictures in the first recess demonstrate the making of butter, with particular regard to «hall-marked» butter. In the show-case in front of the wall **(13)**, cultures of the microbes of importance in the maturing of cream and of the microbes detrimental in their influence on butter-making, samples of butters showing various defects, samples of various kinds of butter, implements and instruments used in testing butter, and butter cultures.

The second recess demonstrates the making of cheese and curde (illustrations). In the show-case in front of the window **(14)**, cultures of microbes which influence the maturing of cheese, various kinds of cheese, as also models of most typical defects of cheeses, the various cultures used in making cheese, implements for testing and methods of testing.

The big oil painting represents a pair of fighting Hungarian bulls (by Géza Vastagh).

In the round room usually kept closed will be found the valuable collection made by the late Ottó Hermann:

XXXI. Primitive Occupations.

In the show-cases in the centre of the room, models of various pentroofs and pens; in the window-recesses may be seen ranchos, country residences of nobles, Somogy County «smoke houses», and peasant dwellings illustrating the development of the same. In the spaces between the windows, models illustrating weir fishing, the cane labyrinths of which have spread all over the world.

On the wall above the door, group consisting principally of primitive (musical) instruments and implements of mountain shepherds.

On the second board and around the same, equipment of herdsmen — implements, instruments, bagpipes, flutes, pipes; also salt-cellars carved by herdsmen, and other articles of general use.

In the centre of the right-hand wall, implements used by

fishermen and fishermen and anglers, — nets, weights, harpoons, bottom lines, articles of equipment and of general use, tools — all of great interest.

On the fifth and sixth boards, masterpieces of popular carving and painting: match-boxes, shepherds, crooks, tomahawks (in Hungarian «fokos»), wallets, razor-cases, knife-handles, etc. delight the eye and give pleasure to visitors. Above the same, other fishermen's implements and nets decorate the wall.

The seventh wall-board displays shepherds, tools of mixed origin, the eighth tools from the Highlands, the ninth tools from Transylvania, the tenth pure Magyar (Hungarian) tools.

Round all the boards hang scoring sticks and rods. The other parts of the walls are covered with coloured sketches and drawings by Eugene Koszkol, Elemér Vezényi, Ottó Hermann and others, the same displaying to the visitor interesting moments of the primitive country life of fishermen and herdsmen both in Hungary and in distant climes.

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After inspecting the groups on the first floor, we return to the ground floor and pass through the meteorological and soil science sections to the refreshment room of the Museum, where visitore will find *a buffet and an inquiry office* at their disposal.

Passing through the refreshment room, we come next to the

GOTHIC BUILDING.

Here has been located the section

Forestry.

In the first large room we find forest-culture.

On either side of the doors are pictures showing the methods of forest culture and of the transport of forest products; also transverse sections of oak-tree trunks, and discs of acacia and Scoth fir wood. In the large show-case **(1)** to the right of the door, collection of birds useful and noxious to the forests and woods of Hungary. In the centre of the room, on two pyramidal stands, collections **(2—3)** of the insects, reptiles and amphibia which are useful or noxious to forests. Between the two collections, an enormous oak cube showing the huge dimensions to which the oak may grow in Hungary **(4)**.

In a glass case in front of the collections of insects, three models **(5)** showing the difficulties attending the afforestation of the Karst district carried out by Hungarian foresters engineers. A similar object is the model **(6)** in the centre of the right-hand wall.

Three models placed behind the collections of insects (in glass cases) display the equipment of the seed-cleansing building

(7), afforestation accompanied by interspaced plantation (8), and the kinds of fences enclosing nurseries for the rearing of saplings (9).

The big model on the right displays the most difficult problem which ever confronted Hungarian engineers — the afforestation of the Karst region (6). To the right of the same, under glass cover, samples of soils found in Hungarian forests (10), together with the rocks forming the underground soil ; above, implements required for forest cultivation in Hungary. Also, abnormal root formations (11), light soil saplings (12), methods of packing fir saplings (13), piece of acacia bridge-pillar which remained sound for fifty years (14), elm discs (15), model of winter shed for preserving acorns (16).

To the left of the model showing the afforestation of the Karst district, collection of forest seeds (17), abnormal root formations (18), oak saplings (19), piece of huge trunk of Turkish hazel (20), and model of nursery (21).

In the centre of the left-hand wall, two tables showing longitudinal and transverse sections of a collection of trees (22—23) exhibiting small trunks ; below, in cases, germinators (24) and method of protection against damage by game (25). Implements for sowing and training (26).

To the left of the collection of trees and saplings, exhibits showing manner of packing saplings of foliaceous trees (27), walnut disc (28), and model of hut for wintering acorns (29); to the right of the case exhibiting method of protection against damage by game, huge oak discs (30), and — under glass cover — model of forest ranger's dwelling (31).

In the centre of the small room marked «*forest protection*», on a stand, exhibits in boxes illustrating the varieties of trees growing in Hungary of importance from a forestry point of view, with sections of trunks leaves and crops (32). In the recess on the right mammals injurious to Hungarian forests (33). In the recess on the left, exhibits showing development of mulberry sapling (34), transverse sections of oak-tree trunks, damage done to forests by man, havoc wrought in forests by mammals (35), abnormities (36), trunk formations, damage wrought by insects (37), damage wrought by fungi (38).

In the *centre of the front part of the vaulted room*, in two large standing cases, the surveying and measuring instruments formely in general use (1—2).

The wall next the doorway is occupied on the right side by a relief map showing the forests of Hungary and the relative frequency of the principal species of trees (3). In the left-hand corner exhibit showing the manner of drafting maps (4). On one side, meterwand and stakes utilised to measure optical distances (5). In the centre of the back wall, in a case (6), equipment serving the purpose of sketching the data recorded by instruments. Below, implements for measuring thickness of trees, and wood gauges. To the right, implements for measuring distances direct, tape-

measures, chains **(7)**; to the left, gauges for measuring the thickness of trees **(8)**.

The centre of the wall opposite the doorway is occupied by tree discs serving for the analysis of the trunks placed on a table **(9)**.

In front of them, on the table, collection of diagrams. Above the table, illustrations showing a series of forest sections ranging from 10 to 100 years **(10)**. Higher up, map showhing forests of Transylvania **(11)**.

On the wall to the left of the table, diagram showing analysis of trunk **(12)** surrounded by illustrations delineating forest transport; on the wall to the right of the table, forestry diagrams showing post-War data relating to timber output and turn-over **(13)**; exhibits dealing with the distribution of our forests and the forests to be treated in accordance with fixed scheme of operations. In the corner, fathom-wand and stakes for measuring optical distances **(14)**.

In the *front part of the vaulted room*, a big model (under glass cover) showing the multifariousness of the manufacture of Slavonian oak **(1)**. On the right-hand side, model of forest light railway car, with raw and impregnated beech sleepers **(2)**; on the left-hand side, oak cubes demonstrating the advance in prices of oak **(3)**. Above, the huge bundles of spruce matches spreading like the crown of a palm show the flexibility of the wood of the spruce.

On a table in the right-hand corner beside the match-palm, model of the chiefrake for logwood at Liptóújvár **(4)**. Beside the same, model of refuge **(5)**. In the corner next the left-hand match-palm, huge beechwood oars, agricultural implements, felling implements, spiltting saws. A trunk-analysis diagram and 4 diagrams showing the distribution of Hungarian forests in 1896, the year of the Millennium. Below, beside the wall, pine logs showing the methods of cutting up logwood **(6)**. Next to the left-hand wall, two large cases: in the first **(7)**, implements for marking trees; in the other **(8)**, carved and turned wooden articles. Opposite these cases, big models — log-roller **(9)**, large frame-saw driven by electricity **(10)**, and two water-driven forest saws **(11—12)**.

Opposite, between the pillars supporting the ceiling, collection of polished and unpolished veneers of Hungarian and tropical woods **(13—14)**, and a huge walnut-tree trunk sawn into veneers **(15)**.

The models placed on the tables and the floor illustrate forest transport equipment **(16—19)**. On the first three tables and on the floor, on a revolving bogie, may be seen trucks for the transport of logs and firewood (on old wooden lines and wooden rollers); on the next 4 tables, forest railways from Brezova and the top of Mt. Szikora **(20—23)**.

On the right-hand wall, wheelwright and cooper products **(24)**; a large board exhibiting the manufacture of beechwood by distillation and bending **(25)**. Huge beechwood oars **(26)**; behind the same, various specimens of oak parquetry.

To the left of the seventh table (railway model), on both sides of

the big standing case, collection of polished Hungarian and foreign woods, wood distillation products, and tannic acid. To the left, on two tables, two large models **(28—29)** showing charcoal burning in a forest. Below, four log-slides **(30—33)**. To the left of the same, model of limestone quarry and lime-kiln **(34)**.

Opposite, beside the left-hand wall, model showing a roller logslide and the drift-way **(35)**. To left and right, various kinds of forest sledges and carts **(36—37)**.

In the large case (next to the wall), split, and bent and sawn wood articles **(38)**. Next, along the wall, 4 models — lock at Brusztura **(39)**, fascine work **(40)**, gully dam of hedge-work **(44)**, and diking of shore at Brusztura **(42)**.

To the right of the same, in 5 rows, models placed on 14 tables, — hanging bridge at Garamrév **(43)**, girder bridge secured by wedges **(44)**, drift-way for timber and rock for throwing out timber.

In the second row — from left to right — exhibits showing shore-protection and bed-regulation **(46)**, raft-making in the counties of Máramaros **(47)**, Maros-Torda **(48)**, and Zólyom **(49)**. Also, dike **(50)**, distributing dam **(51)**, parallel works **(52)**, and the huge reservoir at Ozora **(53)**.

In the third row of models, exhibit showing the firewood throwing out at Tótsóvár **(54)**, and the regulation of the «vortex» of the river Talabor **(55)**.

In the fourth row, models of the sluices of the brook Tarcal **(56)**, in the Saling valley **(91)**, and of the river Kisgaram **(58)**.

In the fifth row, models of trestle dam **(59)** from Torda-Aranyos County, raft-gate used on a sluice in Máramaros County **(60)**, next, watergate at Abrudbánya **(61)**; raft-gate with lock-beams at Görgény **(62)**, and dam with gate from Máramaros **(63)**.

Through the doorway on the left we pass into a *small room*. On either side of the doorway, under glass covers, mounted on cardboard, 4 preparations of Japanese leaves, 2 forest scenes and 2 preparations of forest funguses from Japan. Below, on tables under glass cover, collection of mosses **(1)**.

To the right of — and above — the doorway, in 5 groups, in 36 glass boxes on the wall dividing off the large room, a collection referring to forest protection shows the damage done to forests by beetles and insects and the pests themselves. Next to the same, plant preparations from Simonfa **(2)**.

On the section of the wall round the first window to the left of the doorway, in 23 boxes under glass covers, a collection of exhibits referring to forest protection shows damage to leaves and havoc wrought by pests **(3)**. Opposite, on the revolving stand, collection illustrating tree anatomy **(4)** and consisting of membraneous longitudinal and transverse sections shows the inner structure of trees. In the centre of the room, in the upper part of the larger case **(5)**, a collection of 70 preparations in alcohol shows the fungus diseases attacking trees ; on the table-top, in 146 phials, collection of buds ; and in the show-case in the large window-recess on the

left: collection of longitudinal sections of trees **(6)**; on the shelf on the left-hand wall, by-products of forestry, tanning materials, vegetable tar and other products of secondary utilisation of forests **(7)**. On the shelf on the right-hand wall, forestry by-products in glasses **(8)**. Cellulose used in making wood paper, products of carbonisation and tar distillation.

On the right-hand wall of the small room, in 54 glasses, collection referring to forest protection showing the havoc wrought by insects **(9)**. In three cases, exhibits of useful insects **(10)**; above the same, forest fungus diseases; below the same, mounted on cardboard, under glass covers, 22 preparations of Japanese foliaceous trees. The collection of transparencies shows chiefly trees of huge dimensions **(11)**.

In the last recess, on small tables, yields of conifers, together with their cones: those on the right being from Hungary **(12)**, those opposite chiefly from America **(13)**, and those on the left from Japan **(14)**. Above the table on the right may be seen exhibits demonstrating the manufacture of guttapercha **(16)**; above the table opposite, exhibits illustrating the manufacture of caoutchouc **(17)**.

On leaving the small room containing the forestry education group we find ourselves opposite the main staircase of the Gothic building. Round the staircase, on the ground floor, has been located the independent section of

Fishery.

On the boards hanging to the right and left of the passage may be read a short history of Hungarian fishery and fish-breeding **(1)**.

For clearness sake, below we distinguish seven sub-groups.

A) Fish Fauna.

In the centre of the right and left hand passages, on 4 tables in each case, the fish fauna of Hungary is exhibited in the form of alcohol preparations. Below the same, on the side near the windows, typical photographs illustrating Hungarian fishery and pisciculture, and on the other side, coloured pictures of the fish of Central Europe. (For the objects placed in the window recesses, see below sub «Anatomy and Embryology»). On the walls of all four passages, in cases resting on concoles, specimens of species of the Hungarian fish fauna of interest economically or for other reasons, in the form of dry preparations: **2.** crucian (German carp); **3.** king carp; **4.** Hungarian carp; **5.** tench; **6.** bream (bleak); **7.** sturgeon; **8.** rainbow trout (imported and domesticated); **9.** and **10.** two varieties of crucian; **11.** rudd; **12.** cross-breed of carp and crucian; **13.** barbel; **14.** knife-fish; **15.** salmon; **16.** pike; **17.** perch;

18. broad-snout ; **19.** roach ; **20.** common carp ; **21.** turbot ; **22.** sheat-fish ; **23.** freshwater eel ; **24.** perch-pike ; **25.** sterlet ; **26.** isinglass-fish ; **27.** croos of sterlet and broad-snout ; **28.** eel-pout ; **29.** trout.

On the two side-walls at the back of the room, reliefs showing most important species of Hungarian fish fauna. The largest of these is a model of a sturgeon.

B) Anatomy and Emryology.

In the first window-recess of the right-hand passage, fins, mouths and dentitions of omnivorous and carnivorous fishes, in the form of preparations preserved in alcohol.

In the third window-recess of the right-hand passage, anatomical preparations of the inner organs of fishes.

In the first window-recess at the back of the room, the development of the brown trout and the rainbow trout is shown by preparations preserved in alcohol.

In the second window-recess at the back of the room, we find a skeleton and the development of the carp. The latter is illustrated by preparations preserved in alcohol. Also preparations of the scales and pharyngeal bones of Hungarian cyprinoids.

In the third window-recess at the back of the room, exhibits showing skeleton and development of the perch-pike, the latter being illustrated by preparations preserved in alcohol.

Beside the left-hand — shorter — wall at the back of the room, may be seen alcohol and dry preparations of Hungarian craw-fishes (for the rest of the material placed at the back of the room, see the sections «Fish Biology», «Fishing Tackle» and «Fishery by-products» below).

In the first window-recess of the left-hand passage, skeleton of sheat-fish : in the second window-recess, on a shelf, cartilaginous skeleton of sterlet, together with embryological preparations of the stickleback and the bitterling and skeleton of a carp.

Below the third window of the left-hand passage, on a table, are placed preparations in alcohol of deformed carp, of various kinds of fishes and their roe.

Below the fourth window of the left-hand passage, on a shelf, a few specimens of those species of fishes which are protected by law.

C) Fish Biology.

On the right-hand wall at the back of the room, a sketch showing the natural feeding of fishes ; below, on a stand, collection of fish-foods and fodder. Drawings by Eugene Duday of the organisms serving as natural food for fishes.

From the right-hand and left-hand passages and from the back of the room we get a view of a small artificial pond containing live fishes, while round the same may be seen stuffed specimens of the enemies of fishes — mammals and birds, in groups.

Near the narrow wall on the left side of the back part of the room, to the left, is a stuffed specimen of the most dangerous enemy of fishes among mammals, the otter **(30)** ; above the same, preparations preserved in alcohol of fish-eating reptiles, amphibia and insects.

In the centre of the back part of the room, on the stand above the octangular sofa, stuffed specimen of the crested pelican.

D) Fishing Tackle; Fishing Methods.

The various kinds of nets and fishing gear have been hung on the ceiling and walls of all four parts of the room. In the same places we find also the implements required for making nets. In the back part of the room, on the ceiling, is hanging a complete apparatus used in catching sturgeon — an apparatus no longer used in Hungary. In the centre of the back part of the room, on a table, a model showing ice-fishing on Lake Balaton **(31)**, and a model showing the winter life of fishers **(32)**. Below the models may be seen models of ancient fishing gear for catching mud-fishes and of a fish-weir.

At the entrances to the right- and left-hand passages, on either side of the staircase, two boards and two tables with glass tops showing the various forms of tackle and equipment used in Hungarian waters by anglers. Near by, a wall-case showing the manufacture of fishing rods.

E) Fishery by-products and the Industrial manufacture of the same.

In the centre of the narrow wall on the left side of the back of the room may be seen the preparation for obtaining artificial pearls («essence d'orient») **(33)** from the silvery scales of fishes — the bleak, and the knife-fish — living in Lake Balaton in large numbers.

At the establishment of the Lake Balaton Fisheries Co. Ltd. at Fonyód, from the fishes mentioned above and from others of little value scaled for the purpose of obtaining artificial pearls, a fishmeal is prepared which is used as fodder for pigs and poultry and also for feeding trout. Group of photographs showing equipment for the manufacture.

F) «Tagging» of Fishes.

For the purpose of studying the ways of life, growth, length of life and migration of fishes, various «tags» similar to the rings put on birds by ornithologists are used. Exhibits showing the various «tags» hitherto used in Hungary, together with some of the «tags» and «tagged» fishes taken and sent in to the Museum.

G/ Pisciculture.

On the sills of the windows overlooking the artificial pond may be seen : model of a house for hatching trout eggs by incubation, and the two varieties of incubators for hatching trous eggs. Also a model of the most important technical device employed by fish-breeding companies — the so-called «wooden monk», a kind of weir or garth.

On the lower shelves of models Nos. **31** and **32,** boxes used for the transport of roes, and baskets employed for hatching the eggs of the perch-pike.

Model **(34)** of the first artificial fish-breeding establishment in Hungary — for rearing carp — founded at Simontornya in 1894.

Plans and photographs of the numerous fish-breeding establishments in Hungary have been placed on the walls ; the subjects being explained by texts in three langueages.

Leaving the Fishery section, we pass up the broad principal staircase to the first floor, where we find the

Venery (Shooting and Hunting)

section.

Our attention is attracted at once by two fighting wild boars (both shot at Gödöllő by the late Emperor-King Francis Joseph I.). On the right we see a wild boar defending itself against the attack of four wolves ; while on the left may be seen a whole family of lynxes with their prey.

Round the open landing is grouped the continuation of this section. The most striking sight of this part is the group of stuffed brown bears (the biggest bear was presented to the Museum by Count Géza Andrássy) placed on the rocks.

In this room, in show-cases, we find the smaller Hungarian carnivorous mammals — e. g. the weasel **(1),** the stoat **(2),** the marten **(3),** the pine marten **(4),** the fitchew **(5),** the ferret **(6),** and the wild cat **(7)** — in their winter and summer coats. This series is supplemented by several other groups of stuffed animals,— a family of foxes, a family of badgers, and a family of otters. There is also a wild sow with her farrow.

On the walls of the room may be seen a whole collection of life-like stuffed specimens of Hungarian birds of prey (griffon vulture, black vulture, bearded vulture, imperial eagle, screaming eagle, baldheaded eagle, osprey, dwarf eagle, kites, harriers, hawks, sparrowhawks, buzzards, kestrels, ravens, and various species of crows).

On tables with glass tops, collections of eggs of birds of prey; and under glass table-tops are exhibited the prints of the talus and paws of the useful and noxious animals forming objects of the chase, as also the excrements of big and small game.

The equipment of the room is supplemented by the antlers presented by Count Gyula Jankovich-Bésán, which have been mounted on stands ; while the walls of the room are ornamented with frescoes portraying ancient hunting scenes and with steel engravings made by Ridinger, the famous eighteenth-century animal artist.

The walls of all the rooms belonging to the venery section are adorned by a rich collection of hunting trophies presented by the late Count Charles Forgách.

The exhibits in the next small room show the circumstances attending the chase in olden days. The three stuffed elks are from Germany ; but they remind us of the days of yore — centuries ago — when this gigantic species of animal could still be hunted in the territory of Hungary. The old-world manner of hunting with hawks is recalled by the figure of a falconer (dressed in contemporary fashion, fully equipped for hawking). In glass-cases on the walls we see stuffed beavers, the skeleton of a beaver, the skull-bones of a cave bear, old guns and hunting gear.

The centre of the large room is occupied by six big groups of stuffed animals. Of these groups the largest is that showing the noblest and most famous big game of Hungary, the red deer.

The stags and hinds and fawns shown in their winter and summer coats respectively include a splendid stag from Máramaros wearing a sixteen-branched antler (the gift of His Royal Highness Archduke Joseph).

One half of group I. consists of specimens of hares ; the other half of specimens of rabbits.

Group II. shows the seasonal changes in the shape of the deer.

Group III. comprises moufflons and tups from Gyímes.

Group IV. includes chamois from Retyezát in Hunyad County (Transylvania). The group of Alpine (Carpathian) game is supplemented by a family of stuffed marmots.

Hungarian fallow deer are shown in characteristic varieties of colour, in both summer and winter coats.

In this room, in glass cases, are collected all those species of Hungarian birds which are of interest to sportsmen, either as game or as permanent residents in, or visitors to, preserves which are under the protection of the law and must not be shot. On the shelves of the cases may be seen all species of wild geese and wild ducks found in Hungary, together with numerous species of water fowls of all sizes inhabiting cane-brakes and reeds ; also the aigrette **(1)**, the little egret **(2)**, the crane **(3)**, the common bustard **(4)**, the little bustard **(5)**, the wild turkey **(6)**, the various species of pheasant, the golden pheasant, the capercailzie, the heath cock, the black grouse, the redlegged partridge, the various species of wood cocks, wild pigeons, the turtle dove, the fieldfare, and many other members of the Hungarian bird world. In glass cases will also be found exhibits demonstrating the methods of breeding, feeding, training and catching the pheasant, and the manner of catching hares with nets.

The walls of the room are decorated with a long row of stag, fallow deer and deer antlers and heads respectively and of moufflon horns.

In the *corner room built in the form of a chapel* are exhibited the portraits of the most eminent Hungarian sportsmen. Here we see the portraits of : the late Emperor-King Francis Joseph I. **(7)**, in hunting dress, His Serene Highness Admiral Nicholas Horthy de Nagybánya, Regent of Hungary **(8)**, while taking part in a drive, His Royal Highness Archduke Joseph **(9)**, His Royal Highness Archduke Joseph Francis **(10)**, His Royal Highness Archduke Albrecht **(11)**, Prince Hohenlohe-Oehringen, Count Stephen Bethlen **(12)**, and the late Count Charles Forgách **(13)**.

In a glass case is exhibited the 9·3 millimetre Mauser gun belonging to His Highness Archduke Joseph with which — between 1900 and 1927 — His Highness shot altogether 2730 head of game of various species. In the centre of the room a fine stuffed hart. On a separate stand two fighting stags. Under the glass tops of the tables, small sporting trophies — chamois beards, tufted stag-manes, wild boar bristles, pearly teeth of stags, and feathers of birds.

The material contained in the next room consists primarily of a number of sporting guns (fowling pieces) — a series of exhibits inculding all types from the oldest fireloks to the most-up-to-date guns of modern times. Also the other implements (instruments) and equipment used by sportsmen (quail-calls, bugles, horns, powder-flasks, shot-pouches, drinking horns, game bags, knapsacks, cartridge-bags, and the various articles of equipment used in training shooting dogs and blood hounds). Under the glass top of a table, a large collection of the various kinds of gunpowder, cartridge cases, wads and small shot. A very striking exhibit is the collection of some 150 huntsman's glasses carved out of wood which were presented to the Museum by Mrs. John Koosy and are of value also as products of decorative art. On a table, a small figure of a stag : the various parts of the body marked on the figure, and the coloured pictures showing the blood-stains to be found ont the trail of wounded big game, explain the conclusions to be drawn with recepst to the nature of the wound.

In the centre of the room, a group of stuffed animals — the gift of His Royal Highness Archduke Joseph. On either side of this group a big stuffed hart in the act of roaring. Coloured figures of hounds show the various species of greyhounds, bloodhounds, pointers (shooting dogs) and dachshunds. On the tables, under glass covers, models of stag-trap, game-feeding stations, huntsmen's camp, and the hut for shooting over owls, illustrate the equipment of game preserves. Also in glas cases, on tables, exhibits showing the development of the pheasant — illustrated by half-open eggs showing the development during the whole period of incubation and by stuffed birds showing progress from one-day chickens to the fully-developed fowl.

On the branches of the huge tree-trunk placed in the centre

of the alcove-shaped room — as also on the walls round the trunk — may be seen a complete collection of stuffed owls. Every species of Hungarian owl is represented here (1—2 specimens of each). Below, on tables and shelves, the various kinds of traps, springes mares and other apparatuses used in trapping beasts and birds of prey. In this recess, as also on the walls of the staircase leading to the ground-floor, old-fashioned and modern guns — battered and worn out — confiscated from poachers, together with old curiosities of the chase.

Gótikus épület (Vajdahunyad vára). — Gotischer Flügel (Schloss Vajdahunyad). — Aile gothique (Château de Vajdahunyad). — Gothic building (Vajdahunyad Castle). — Tratto gotico (Castello Vajdahunyad).

Főlépcső. — Haupttreppe. — Escalier principal. — Main staircase. — Scala principale.

Kísérletügyi csoport. — Gruppe der landwirtschaftlichen Versuchsanstalten. Groupe des Instituts de recherches. — Group of the Agricultural Experimental Stations. — Sezione degl'Istituti sperimentali agricoli.

Növényvédelmi osztály. — Pflanzenschutz-Abteilung. — Section de la Protection des plantes. — Plant protection section. — Sezione della difesa delle piante.

Gabonavédelmi csoport. — Gruppe der Schädlinge der Getreidearten. — Groupe des parasites des céréales. — Group of diseases of cereals. — Gruppo dei nemici dei cereali.

Szőlészeti osztály. — Weinbau-Abteilung. — Section de la viticulture. — Viticulture section. — Sezione della viticoltura.

Selyemtenyésztési osztály. — Seidenzucht-Abteilung. — Section de la sériciculture. — Section of sericiculture. — Sezione sericoltura.

Szarvasmarha tenyésztési osztály. — Rinderzucht-Abteilung. — Section d'élevage bovin. — Horned-cattle breeding section. — Sezione d'allevamento bovino.

Tejgazdasági osztály. — Milchwirtschaftliche Abteilung. — Section de la laiterie. — Dairy section. — Sezione del caseificio.

Vadászati osztály. — Jagd-Abteilung. — Section de la chasse. — Hunting section. — Sezione della caccia.

Vadászati osztály sarokterme. — Eckraum der Jagdabteilung. — Petite salle de la section de chasse. — Corner room of the hunting section. — Sala d'angolo della sezione della caccia.

Fegyverterem. — Saal der Jagdgewehre. — Salle des fusils de chasse. — Room of sporting guns. — Sala dei fucili da caccia.

of Vienna were many small vegetable gardens belonging to the workers. The crops beyond looked good, but seemed to be in exceedingly small strips. There was somewhat more clover,

Figure 163. An Austrian village a few miles north of Vienna.

excellent red clover, but mainly wheat, sugar beets, potatoes, vegetables, and small fruits. There were only a few scattered

Figure 164. An Austrian village 5 miles southeast of Eggenburg.

farms; most of the people live in the villages. As we approached the Czech frontier there were some shallow and some sandy podzolized soils with excellent pine forests. After we just crossed

the border there was good farm land, then poorly drained, sandy Podzols. The land seems well cared for but not of high quality. There are many scattered meadows and forests. As we approached Prague, I saw some old terraces and some fields cultivated on the contour, although there was no significant accelerated erosion. Constantly there is an increase in the amount of grassland. The soils are quite variable--Brown Forest and podzolized soils, from limestone, sandstone, etc., and patches of Rendzina. The crops look good near Prague and there are somewhat more scattered farms. There are many patches of well kept wood lots, mostly pine (and spruce) on well-drained sties. Here there are not many grapes but some tree fruits.

As we left Prague, things were much the same until we came into a narrow river valley with steep slopes. The valley was very beautiful but much of the land is unsuitable for farming. Darkness came upon us shortly after passing the German frontier.

Hohenfinow

We drove by car from Berlin, mostly north, to the large estate of Herr Felix von Bethman-Hollweg. We passed some excellent farms, large, small, and of medium size. Some were scattered but still most of the people live in villages. The soils were mostly sandy loams, loams, and sands, developed from

glacial drift, podzolized, and acid. The sands are used for rotation forestry under strict government law. For many years plantings have been mostly of pine but now beech is being introduced in order that the forest duff will not be so acid. The sandy loams are used mainly for rye and potatoes with some red clover, rape seed, barley, alfalfa, etc. The loams are used more for wheat, sugar beets, barley, clover, etc. As much as 10 acres of heavier soil will be cut out of a field of sandy loam for sugar beets and wheat. Lime and complete fertilizers are used as well as carefully preserved manure. A large area of poorly drained bottom land is used for hay. The land is fertilized and with two cuttings yields about 3 tons of hay, mostly red top with a small mixture of clover. Without fertilizer the yields are low and the hay has a big proportion of weeds.

Figure 165. A view of the courtyard in the farm of Herr Bethman-Hollweg.

Figure 166. Another view of the courtyard.

Figure 167. A view of the front of Herr Bethman-Hollweg's home.Herr Bethman-Hollweg in car. Mr. Steere and Mrs. Wilson by the car.

Figure 168. A view of a German labor camp.
(Note its resemblance to our CCC)

Barley of high protein content is used for feed and with low protein content for malting. Herr Bethman-Hollweg is interested in breeding a high protein barley. Special potatoes of high starch content are grown for dried potato flakes and for alcohol. On this large farm there is a distillery and the slops are used to feed dairy cattle and hogs. In addition, on this farm, potato flakes are produced and there is a large brick yard and saw mill. On this farm the manure was carefully piled and the liquid manure pumped back over it rather than being used separately.

This farm has a large 19th century manor house, beautifully decorated inside, and a village for the workers. About 200 cows were kept. There was a large barn for swine, a first class machine shop, etc.

During the day we visited a German "Arbeitsdienst" camp--very much like our CCC camps but with more stress on military discipline. (See Figure 168).

Figure 169. A street view in Berlin.
Note the windows in the center store very carefully.

VORSPEISEN

Italienischer Salat	0.75
Frische Fischmayonnaise	0.90
Matjeshering auf Eis mit neuen Kartoffeln und Butter	1.—
Rindfleischsalat auf Feinschmeckerart	1.—
2 Möweneier mit Butter und Radieschen	0.90
Portion Tafelkrebse (4 Stück)	1.45
Räucheraal mit Butter	1.85
Langusten-Mayonnaise	1.85
Hühnersalat à la Mikado	2.50
Krebsschwanzmayonnaise	2.50
Krebsschwänze in Dill mit Butterreis	2.50
Kalte Vorspeisenplatte für 2—3 Personen	3.75
Halber frischer Hummer, kalt, mit Remoulade	4.25
3 Krebsschwänze, Cocktail	1.25

KALTE SPEISEN

Kleiner kalter Aufschnitt mit Käse und Butter	0.90
Gekochter oder roher Schinken	1.25
Kalte Schweinskotelette mit Spargelsalat	1.45
Pökelrinderbrust mit Sahnenmeerrettich und Kartoffelsalat	1.65
Pökelzunge mit Butter	1.65
Sülzkotelette, garniert, mit Bratkartoffeln	1.65
Kalter Kalbsbraten mit Butter	1.85
Tatar-Beefsteak mit Ei und Butter	1.85
Kaltes Roastbeef mit Remoulade	2.—
Echter westfälischer Landschinken mit Butter	2.—
„Vaterland"-Spezialplatte, komplett	2.50
Halbes belegtes Brötchen mit Wurst oder Ei oder Schinken	0.30
1/2 belegtes Brötchen mit Sardellen, Lachs oder Kalbsbraten	0.40
1 belegtes Schwarzbrot mit Schinken oder Wurst	0.60

SUPPEN

Tasse Kraftbrühe	0.35
Tagessuppe	0.40
Fruchtkaltschale	0.45
Kraftbrühe mit Ei oder Mark	0.60
Hühnercrèmesuppe	0.75
Huhn im Topf mit Nudeln und Spargel	1.75

FISCHE

Barbenschnitte, gebacken, mit Remoulade, Kartoffelsalat	1.45
Zanderschnitte, Müllerinart	2.—
Frischer Aal, grün, mit Gurkensalat u. neuen Schwenkkart.	2.50
Kalter Rheinlachs, garniert	2.50
Forelle, blau, mit frischer Butter oder à la Meunière	2.50
Seezunge, gebacken, Sauce Remoulade oder Meunière	2.65
Frischer Rheinlachs, nach Wunsch zubereitet	3.—

FLEISCHGERICHTE

Hausmachersülze mit Remoulade und Bratkartoffeln	1.—
1 Paar Debrecziner Würstchen mit Gulaschsaft, Sauerkraut und Kartoffelbrei	1.—
3 Rostwürstchen mit Sauerkraut und Kartoffelbrei	1.25
Panierte Schweinskotelette mit gemischtem Salat	1.45
Ungarisches Gulasch mit Kartoffeln	1.45
Deutsches Beefsteak mit Setzei und Bratkartoffeln	1.45
Kaltes Schweinskotelette mit Spargelsalat	1.45
1 Hammelkotelette mit pommes frites	1.65
Eisbein mit Erbsenbrei und Sauerkohl	1.65
Löwenbräu-Spezialplatte (garnierter Sauerkohl)	1.85
Wiener Schnitzel oder Paprikaschnitzel	2.—
Junge Kohlrabi mit kaltem Kalbsbraten	2.—
Halbes junges Masthähnchen, gebr., mit Salat oder Kompott	2.35
Kalbsleber mit Zwiebeln und Kartoffelbrei	2.35
Kleines Kalbskotelette mit frischen Stangenspargel	2.35
Rumpsteak mit pommes frites	2.50
Filetsteak mit pommes frites	2.85
2 Filets mignon, garniert „Haus Vaterland"	3.—
Junge Hamburger Mastgans mit Apfelkompott	3.50
Entrecôte oder Chateaubriand (für 2 Pers.) pommes frites	5.70
mit Sauce Béarnaise	6.50
mit jungen Gemüsen garniert	8.—

GEMÜSE

Junge Kohlrabi	0.90
Prinzeßbohnen	0.90
Junge Schoten	0.90
Frischer Stangenspargel mit geschlagener Butter	1.45
Frische Champignons à la Crème	1.85
Gemischte Gemüseplatte mit Setzei	2.—

ZWISCHENGERICHTE und EIERSPEISEN

1 Paar Wiener Würstchen mit Kartoffelsalat	0.60
Pastetchen mit feinem Ragout	0.75
2 Eier im Glas	0.60
Omelette, Rührei oder Setzeier, 2 Stück	0.85
2 Setzeier mit Schinken	1.25
Rühreier mit Schinken von 2 Eiern	1.25
Omelette confiture von 2 Eiern	1.25
Ragoût fin, überbacken	1.45

SÜSSPEISEN

Dicke Milch mit Zimtzucker u. Pumpernickel 0.45

Portion Eis nach Wahl mit Waffel: Vanille-, Erdbeer-, Mokka- oder Schokoladeneis	0.85
Baiserschale mit Sauerkirschen und Sahne	0.75
Halbgefrorenes „Haus Vaterland" 0.85 — Obstsalat	1.—
Frische Erdbeeren mit Sahne	1.—
Schokoladeneisschale, garniert	1.35
Eisfrüchte im Becher 1.35 — „Vaterland"-Eiscrème	1.35
Punch romaine	1.35
Schwedenfrüchte mit gekühlter flüssiger Sahne	1.35
Frische Garten-Erdbeeren Melba	1.35

KOMPOTTE

Apfelmus 0.55 — Pflaumenkompott	0.65
Birnenkompott 0.65 — Gemischtes Kompott	0.65

SALATE

Spargelsalat 0.65 — Tomatensalat	0.65
Gemischter Salat — Kopfsalat — Bohnensalat	0.65
Gurkensalat	0.65

KÄSE MIT BUTTER

Portion Butter 0.25 — Harzer	0.65
Vollfettkäse: Stolper Jungchen, deutscher Camembert	0.75
Allgäuer	0.75
Doppelrahmkäse: Gervais 0.85 — Deutscher Doppelrahmk.	0.85

OBST

Banane 0.30 — Tafelapfel	0.40
Portion frische Erdbeeren mit Vanillezucker	0.80
Obstsalat 1.— — Scheibe frische Ananas	1.10
Kempinski-Obstkörbchen	2.—

RHEIN-WEINE

		1/1 Fl. Rm
*1936er Edesheimer	Pf.	2.50
*1935er Binger Rosengarten	R.-H.	3.—
*1935er Niersteiner Domtal	R.-H.	3.50
*1935er Rüdesheimer Berg	R.-G.	4.—
1934er Deidesheimer Mühle Riesling Originalabfüllung Winzerverein	Pf.	5.—
1934er Hattenheimer Engelmannsberg Originalabfüllung der Preußischen Weinbau-Domäne	R.-G.	5.—
*1934er Geisenheimer Katzenloch Originalabfüllung Graf von Schönborn	R.-G.	6.—

MOSEL-WEINE

*1936er Wincheringer Kleinberg	M.	2.50
*1935er Valwiger Herrenberg	M.	3.—
1936er Zeltinger	M.	3.25
*1935er Brauneberger	M.	4.—
1932er Eitelsbacher Karthäuserhofberg Originalabfüllung Wilhelm Rautenstrauch	R.	4.50
1935er Zeltinger Himmelreich Wachstum Ehses	M.	5.—
*1934er Wiltinger Kupp Originalabfüllung Felix Müller	S.	6.—

DEUTSCHER ROTWEIN

*1935er Dürkheimer Portugieser	Pf.	3.—

Die mit * bezeichneten Sorten sind auch in halben Flaschen vorrätig.

ROTE BORDEAUX-WEINE

	1/1 Fl. Rm.
1934er Chât. Bellevue, Blaye	3.—
*1928er Chât. Lafitte Canteloup	4.—
1924er Chât. Tronquoy Lalande St. Estephe	5.—

ROTE BURGUNDER-WEINE

*1934er Beaujolais	3.50
*1933er Côtes de Nuits	4.50

WEISSE BORDEAUX-WEINE

*1933er Entre deux Mers	4.—
*1934er Sauternes	4.50

DEUTSCHE SCHAUMWEINE

KEMPINSKI-Sekt, Trocken		5.—
KEMPINSKI-Grenz-Sekt	1/1 Fl.	5.25
	sec oder demi sec 1/2 Fl.	3.05
KEMPINSKI-Sekt, halbsüß		4.50
	1/2 Fl. 2.65, 1/4 Fl.	1.65
KEMPINSKI-Austern-Sekt		5.50
KEMPINSKI schäumender Assmannshäuser	1/2 Fl. 3.65,	6.50

SÜDWEINE Glas 10 cl Inhalt 0.60

*Tintoretto, kräftiger roter Süßwein	3.—
*Albinetto, eleganter süßer Weißwein	3.—

SÜDWEINE Glas 10 cl Inhalt 0.70

	1/1 Fl. Rm.
Feiner weißer Mistella	3.50
Italienischer Wermut „Cinzano" oder Martini & Rossi	3.50
Tarragona, rot	3.50
Malaga, dorado	3.50
Feiner alter Muskateller	3.50
Cadiz Sherry	3.50
Douro Portwein, rot	4.50

OFFENE WEINE und SÜSSMOSTE

1 Glas Apfelsüßmost	Inhalt 20 cl	0.50
1 Glas Weißwein oder Rotwein	Inhalt 20 cl	0.50
1 Glas Schorle, weiß oder rot	Inhalt 20 cl	0.50
1 Glas Bowle	Inhalt 20 cl	0.66
1/4 Flasche Boxbeutel (Würzburger)		0.80
1 Glas Malaga, Sherry, Portwein oder Ital. Vermouth, Glas 10 cl Inhalt		0.70
1 Glas 1936er Neefer Frauenberg, natur (Mosel)	Inhalt 20 cl	0.60
1 Glas 1937er Bosenheimer Rosenberg (Rheinhessen)	Inhalt 20 cl	0.60
1 Glas 1935er Serriger Kupp (Mosel) Wachstum Karl Haupert	Inhalt 20 cl	1.—
1 Glas 1936er Oestricher Pfaffenpfad Riesling (Rheingau) Wachstum Gebr. Kunz		1.—

Bestellungen auf Weine außer dem Hause nehmen die Geschäftsführer entgegen.

BIERE

Münchner Bürgerbräu, dunkel	0,3 (6/20) Ltr.	0.50
Fürstenberg-Bräu	0,3 (6/20) Ltr.	0.50
Pilsner Urquell	0.25 Ltr.	0.60
Hochschul-Porter	Flasche	0.90
Englisch-Ale, Bass & Co.	Flasche	1.20
Englisch Porter, Bass & Co.	Flasche	1.20

MINERALWÄSSER

Kempinski-Tafelwasser	0.30
Klub-Soda	0.30
Kaiser-Friedrich-Quelle	0.50
Staatl. Oberbrambacher Mineralbrunnen	0.50
Rhenser Mineralbrunnen	0.50
Gerolsteiner Sprudel	0.50
Altheider Prinzensprudel	0.55
Staatl. Fachingen	0.60
Mattoni's Gieshübler	0.60
Boa Lie	0.55

LIKÖRE und SPIRITUOSEN

Kempinski-Liköre

Glas 2 cl Inhalt

Allasch	0.40
Cherry Brandy	0.40
Curaçao orange	0.40
Edelkirsch	0.40
Halb und Halb	0.40
Abt-Likör	0.40
Knickebein	0.80

Underberg Semper Indem	0.50
Deutscher Cointreau	0.60

Bardinet-Liköre

Blackberry Brandy	0.50
Curaçao triple sec	0.50
Cordial	0.50
Goldwasser	0.50
Kristall-Kümmel	0.50
Kurfürstlicher Magenbitter	0.50
Maraschino	0.50
Menthe glaciale, Pfefferminz	0.50
St. Martial, Karthäuser grün	0.50
Prunelle	0.50

Französische Liköre

Gde. Chartreuse	1.75
Veritable Benediktine Dom de Fecamp	1.75

Spirituosen

Aquavit, Marke Malteserkreuz	0.40
Schwarzwälder Kirschwasser	0.40
Feiner alter Getreidekorn	0.40
Steinhäger, Schlichte	0.40
Feinster Jamaika-Rum-Verschnitt	0.40
Feinster Batavia-Arrac-Verschnitt	0.40

Schweden-Punsch

Cederlunds Caloric Punsch auf Eis	Glas 1.—
Cederlunds-Caloric Punsch	1/2 Fl. 5.50
	1/1 Fl. 10.—

Deutsche Weinbrände

Glas 2 cl Inhalt

KEMPINSKI-Weinbrand „Edel"	0.40
KEMPINSKI-Weinbrand „Edel" mit Klub Soda	0.70
Cognac 3 Kronen	0.75
Nikolaschka	0.80
Martell ***	1.25
Rémy Martin Grande Champagne	1.50

Flips

Sherry	1.25
Portwein	1.25
Egg-Nogg	1.50
Champagner	1.50

Cobblers

Sherry	1.25
Portwein	1.25
Champagner	1.50
KEMPINSKI-Spezial	1.50

Cocktails

Prairie-Oyster	1.—
Manhattan	1.25
Martini	1.50

Whisky und Gin

Black & White mit Klub Soda	1.75
Johnnie Walkers Whisky Red Label mit Klub Soda	1.75
White Horse mit Klub Soda	1.75
Gordons Gin mit Klub Soda	1.75

Auf sämtliche Preise wird ein Zuschlag von 10% für die Kellner in Anrechnung gebracht. — Auf sämtliche Getränke, ausgenommen Bier und Milch, 10% Getränkesteuer.

Nr. 1

Kaffee Vaterland

Betrieb Kempinski

8—11 Uhr
Wiener Frühstück Rm. 0.55
1 große Tasse Kaffee,
1 Hörnchen, 1 Brötchen,
Butter und Marmelade

Bis 13 Uhr
Vaterland-Frühstück Rm. 1
nach Wahl: 1 Kännchen Kaffe
Tee, Kakao, Schokolade od
Fleischbrühe, 2 Eier im Gl
1 Hörnchen, 1 Brötchen,
Butter und Marmelade

Bis 13 Uhr
Klub-Frühstück Rm. 1.60
bestehend aus nach Wahl: Portion Kaffee, Tee, Kakao, Schokola
oder Fleischbrühe, 1 Ei gekocht oder im Glas, Platte Aufschn
mit Butter, Weißbrot, 1 Brötchen und Marmelade

An Sonn- und Feiertagen sowie ab 19 Uhr Kaffee nur in Kännch

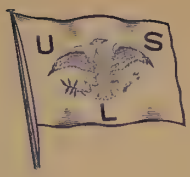
WARME UND KALTE GETRÄNKE

Tasse Kaffee mit Sahne	0.
Tasse Kaffee Hag	0.
Tasse Schokolade	0.
Tasse Kakao	0.
Glas Wiener Melange	0.
Glas Schokoladen-Kaffee	0.
Glas Tee mit Zitrone oder Milch	0.
bis 14 Uhr RM 0.40	
Kännchen Kaffee mit Sahne	0.
Portion Schokolade	0.
Portion Kakao	0.
Portion Tee mit Zitrone oder Milch	0.
bis 14 Uhr RM 0.58	
Kännchen Kathreiners Malzkaffee	0.
Limonaden von Himbeer — Orangeade — Zitrone — Grenadine — Kirsch — Ginger	0.
mit Selters 0.30 mehr	
Glühwein von Rotwein	0.
Kännchen Kaffee Hag	0.
Türkischer Kaffee	0.
Grog von Arrak, Weinbrand oder Rum	0.
Mokka double in Silber-Filter	1.
Schlummer-Punsch, kalt oder warm	1.
Burgunder-Punsch, kalt oder warm	1.
Wein-Chaudeau	1.
Eier-Punsch, kalt oder warm	1.

Dicke Milch mit Zimtzucker u. Pumpernickel 0.

KUCHEN, GEBÄCK und ERFRISCHUNGEN

2/2 Brötchen oder Hörnchen mit Butter	0.
4 Stück feinstes Teegebäck 0.25 — 3 Stück Makronen	0.
Diverse Kuchen nach Wahl	0.
Torte nach Wahl 0.50 — Baumkuchenring	0.
Portion Eis nach Wahl mit Waffel:	
Vanille-, Erdbeer-, Mokka- oder Schokoladeneis	0.
Eiskaffee od. Eisschokolade 0.85 — Mazagran-Kaffee od. -Tee	0.85
Eiscrème-Sodas von	
Zitrone, Orangeade, Grenadine, Kirsch, Vanille od. Mokka	0.85



List of Passengers

UNITED STATES LINES

LIST OF PASSENGERS

S.S. PRESIDENT HARDING

FROM

HAMBURG ... ... JUNE 22nd, 1938

HAVRE ... ... JUNE 23rd, 1938

SOUTHAMPTON ... JUNE 24th, 1938

COBH ... ... JUNE 25th, 1938

TO

NEW YORK

UNITED STATES LINES

GREETINGS

We extend to you a hearty welcome on board this " President " ship flying the American flag.

There are only two "President" ships engaged in regular service in the North Atlantic trade—the PRESIDENT ROOSEVELT and the PRESIDENT HARDING. Together with the WASHINGTON and the MANHATTAN they maintain a regular weekly service Eastbound from New York to Cobh, Plymouth, Havre and Hamburg, and Westbound from Hamburg, Havre, Southampton and Cobh to New York.

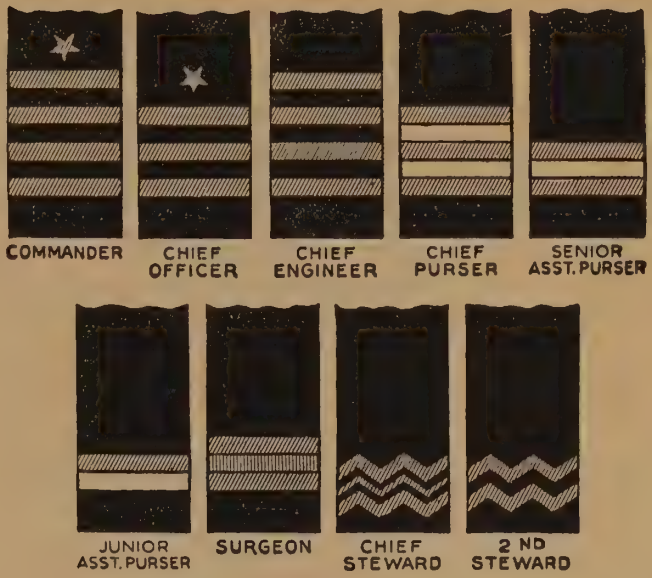
This all-American service is attracting a constantly increasing number of discriminating Americans who appreciate the extension to the seas of the high standard of living to which they are accustomed on shore.

This American liner is your home afloat and each member of the crew will make every effort each day that you are aboard to insure a most happy time while you are "at home" with us.

UNITED STATES LINES.

"TRAVELERS abroad are to a great extent unofficial envoys of their country, and can often influence some of those they meet to return their visit, to the benefit of international understanding, commerce and good-will."

HOW TO KNOW THE SHIP'S OFFICERS BY THEIR SLEEVE STRIPES



COMMANDER - - -	Four rows of gold lace with five-pointed star above.
CHIEF OFFICER - -	Three rows of gold lace with five-pointed star above.
CHIEF ENGINEER - -	Four rows of gold lace.
CHIEF PURSER - - -	Three rows of gold lace with white velvet between.
SENIOR ASST. PURSER	Two rows of gold lace with white velvet between.
JUNIOR ASST. PURSER	One row gold lace, one row white velvet.
SURGEON -	Two rows of gold lace with red velvet between.
CHIEF STEWARD - -	Three rows of gold lace zig-zagged.
SECOND STEWARD -	Two rows of gold lace zig-zagged.

OFFICERS

COMMANDER:
JAMES E. ROBERTS
LT. COMM., U.S.N.R.

EXECUTIVE OFFICER - -	ANDREW J. MARLOWE
CHIEF ENGINEER - - -	PATRICK BRENNAN LT. COMM., U.S.N.R.
CHIEF PURSER - - - -	ED. LAFLEN
ASSISTANT PURSER - - - -	PETER BUVIK
SURGEON - - - - -	HERMAN RHOAD
CHIEF STEWARD - - -	ARTHUR LEIGH
SECOND STEWARD - - -	CHARLES HOLLDORB

LIST OF PASSENGERS

Mr. Arthur J. Altmeyer
Mrs. Altmeyer
Miss M. Ambrose
Mrs. Katherine Kissam Arnold

Mr. George Beinke
Mrs. Beinke
Mr. Izan Beller
Mrs. Beller
Mrs. Erna Benjamin
Miss Elsa Benjamin
Mr. Paul S. Bliley
Miss M. Salome Bliley
Miss May Boshard

Mrs. Margot Cahen
Miss Ellen Cahen
Mr. E. F. Carey
Miss Helen L. Cohen

Miss Josephine Dooley
Miss Helen Dooley
Miss Helene Dreyfus
Mrs. Isabella Drysdale

Dr. Walter Eckstein
Mrs. Eckstein
Mr. Hans Engel
Mrs. Engel
Miss Vera Engel

Mr. Sandor Maibaum
Mr. Harry Mandell
Mrs. Mandell
Mr. S. Mannheimer
Mr. Josef Markiewicz
Dr. H. M. Miller
Mrs. Miller
Master Robert Miller
Miss Harriet Änne Miller
Mr. C. O. Moore
Mrs. Moore
Mr. Ferdinand W. Mostertz
Mr. John Muldoon
Mrs. Muldoon
Rev. Joseph B. Muldoon
Rev. John J. Murray

Mrs. E. P. Neutch
Major W. J. Niederprum
Mrs. Niederprum

Dr. Berto A. Olsen
Mr. Bernhard Oppenheim
Mrs. Oppenheim

Mrs. D. E. Parker
Master Donald Parker
Miss Patricia Parker
Miss Amelia Pfaff
Mr. Jules Pollinger
Mrs. Pollinger

Mr. S. Pollock
Mr. Henry Poppelreiter

Mrs. John S. Richardson, Jr.
Mr. Abraham Rittel
Mrs. Rittel
Mr. Ralph J. Rowley
Mrs. Margaret Rubin

Miss Hanna Salomon
Mr. Schneely
Miss Helen D. Slawson
Captain H. E. Snow
Dr. Arthur Sonnenfeld
Mrs. Sonnenfeld
Master Albert Sonnenfeld
Mrs. Stauble

Miss F. H. Trebing

Mr. Fletcher Warren
Mrs. Warren
Mrs. Charles Watkins
Mrs. Emmi Werthan
Mr. Post Wheeler
Mrs. Wheeler
Dr. Alfred D. Wiener
Mrs. Wiener
Mr. M. L. Wilson
Mrs. Wilson

Memoranda

Memoranda

Memoranda

Memoranda

Memoranda

INFORMATION FOR PASSENGERS

All information of a general character may be obtained at the Purser's Office located on "A" Deck.

AMUSEMENTS

SHUFFLEBOARD, DECK TENNIS, DECK GOLF and many other forms of entertainment are available to passengers at any hour during the day.

BINGO, HORSE RACING, and showing of latest TALKING PICTURES are arranged at various intervals during the voyage. Watch bulletin board for time.

AUTOMOBILES : Passengers entering the United States should list uncrated automobiles on their U.S. Declaration form to facilitate Customs Clearance on arrival.

BAGGAGE : Forwarding, transhipment and storage of baggage may be arranged with the Baggage Master.
The company accepts no responsibility for baggage or parcels left on board, except by arrangement with the Baggage Master.

BAGGAGE INSURANCE : The Company's liability for loss of or damage to baggage and valuables is strictly limited, but passengers can protect themselves by insurance which may be procured at the Purser's office.

BARBER SHOP—BEAUTY SALON : These facilities are located on "A" Deck, opposite the Purser's office. A schedule of prices is posted in the shops.

BATHS : Upon application to the Bath Steward, passengers may arrange for the use of baths at a specified time each day.

BELLBOY SERVICE : Bellboys are available at all times during the day, to answer calls in the absence of the Bedroom Steward or Stewardess. They will also deliver messages at the passengers' request.

CABLES AND TELEGRAMS : These are received at the Purser's Office for dispatch and should be handed in at least an hour before the arrival of the steamer at any port.

CATERING : Arrangements may be made with the Chief Steward to continue during the voyage, any diet necessary to the passengers' health or habits.

Passengers are also invited to advise the Saloon Steward of their preferences in diet and cooking so that every attention can be given to their wishes.

CHAIR CUSHIONS : (Please also see Deck Chairs, etc.) These can be rented from the Deck Steward at $1.00 each for the voyage.

CHANGES IN ACCOMMODATIONS : Changes in Accommodations can be made only by the Chief Purser who must collect any difference there may be in fare. A receipt will be issued on the Company's official form.

COMPLAINTS : It is the desire of the Company and the ship's staff to make your crossing as pleasant as possible. Any inattention or cause for complaint regarding the service should be reported immediately to the Chief Purser or Chief Steward so that it can be corrected promptly.

CUSTOMS EXAMINATION : In order to avoid difficulty with Customs Officials, all articles subject to Duty must be declared. Any passenger who is at all in doubt should see the Chief Purser or Baggage Master who will provide the latest available information regarding the Customs regulations of the country to be visited.

DECK CHAIRS AND STEAMER RUGS : These can be rented from the Deck Steward at $1.50 each for the voyage.

DIVINE SERVICES : Protestant Service is held Sundays at 11:00 A.M. in the Lounge.

When there is a Roman Catholic priest aboard Mass is celebrated in the Lounge. Hours of the Mass are posted by the Chief Purser. An altar is available and complete facilities for celebrating Mass are at the disposal of priests by arrangement with the Chief Purser.

DOCTOR (SHIP'S SURGEON) : The Doctor's Office is located on "A" Deck, Aft. The Doctor is authorized to make customary charges, subject to the approval of the Commander, for the treatment of illnesses not originating on the voyage. In the case of illness contracted on the voyage, no charge will be made. Medicine prescribed will be provided free in all circumstances A Registered Nurse is in attendance.

DOGS, CATS OR OTHER ANIMAL PETS : Pets are not permitted in staterooms, public rooms or on the passenger decks and must be placed in care of the Kennel Attendant.

ELECTRICAL APPLIANCES—ELECTRICAL APPARATUS : Private radio receivers or other electrical apparatus must not be operated or connected to the ship's electrical supply circuits without official approval, applications for which should be made to the Purser. Passengers using loud-speakers are requested to avoid disturbing their fellow passengers.

EXCHANGE OF MONEY : For th convenience of passengers, the Purser will exchange a limited amount of American and Foreign monies at rates which will be advised on application.

FIRE AND LIFEBOAT STATIONS : Passengers are urgently requested to familiarize themselves with the notice in their staterooms regarding lifeboat and fire stations, also to take part in the fire and boat drills.

FIRE PRECAUTIONS : Passengers are particularly asked to use care when disposing of cigar or cigarette stubs and matches and to use the receptacles provided for the purpose in different parts of the steamer. Do not throw overboard lighted cigar or cigarette stubs as they may be drawn into open ports and cause fires. This is a serious fire hazard and careful observance of this request is earnestly urged on all.

INFORMATION FORMS : It is earnestly requested that passengers co-operate with the Purser's Office in the completion of information forms used in preparing the Manifest ; also in all matters pertaining to landing cards and landing arrangements.

LIBRARY : The books in the Library, which may be obtained upon application to the Library Steward, are for the use of passengers, free of charge. The co-operation of passengers is requested to assure the prompt return of books as soon as they have been read.

MAIL : Passengers are requested to call at the Purser's Office for mail and telegrams. Mail forwarding addresses may be left at the Purser's Office.

MEAL HOURS :

	When One Sitting	When Two Sittings
Breakfast ...	... from 8:00 A.M.	7:30 and 8:45 A.M.
Luncheon ...	... from 1:00 P.M.	12 Noon and 1:15 P.M.
Dinner ...	... from 7:00 P.M.	6:00 and 7:15 P.M.

Morning Bouillon and Afternoon Tea are served on Deck and in the Public Rooms ar 11:00 A.M. and 4:00 P.M. respectively.

OCEAN PRESS NEWS : The latest wireless news and closing prices of the various Stock Exchanges are given in this paper which is published daily and distributed to passengers without charge.

PAYMENTS ON BOARD : Passengers are requested to obtain a receipt on the Company's form for deck chair, steamer rug or cushion hire, additional passage money, cables, telegrams or freight charges paid on board.

PASSENGER RESTRICTION : Cabin passengers are not permitted to enter Third Class accommodations, or vice versa.

PORTS IN SHIP'S SIDE : Passengers should not open ports. The Bedroom Steward will render this service when desired, provided it is not contrary to the Captain's orders and weather conditions permit. Careful observance of this precaution will avoid accidents, assure the comfort of passengers and prevent water damage to baggage and personal effects.

POSTAGE STAMPS : These are obtainable from the Library Steward on the Promenade Deck. Letters can be mailed on board.

PROFESSIONAL GAMBLERS : Passengers are reminded that professional gamblers are reported as frequent travellers on trans-Atlantic passenger steamers and are warned to take precautions accordingly.

RETURN ACCOMMODATIONS : Passengers desiring information regarding return passage on steamers of the United States Lines or associated lines, including the Panama Pacific Line to and from California, can obtain it from the Chief Purser. Reservations will be secured by radio and deposits to cover received.

ROUND TRIP PASSENGERS : Passengers holding return tickets, and who are undecided about their addresses abroad, should send this information to the nearest office of the Company as soon as possible after landing so that they may be promptly advised of possible changes in sailings and other matters pertaining to their return passage.

All those who hold return tickets are also requested to communicate with our nearest office at least a week in advance of their departure so that any necessary formalities may be arranged prior to the day of sailing.

If for any reason, the holder of a return ticket is unable to travel by the sailing indicated on the ticket, immediate notification should be sent to the Company's nearest office so that any accommodations held may be released and other reservations arranged. Otherwise, the passage money may be forfeited.

SAILING PERMITS : All persons who are not citizens of the United States, including visitors, transients and residents in the United States, must secure Sailing Permits (Income Tax Clearance) from the Bureau of Internal Revenue during the week prior to their departure from the United States.

These permits may be secured at the U.S. Customs House, located at Bowling Green and Battery Place, New York City, or at any other office of the U.S. Internal Revenue. The permit is presented to the Internal Revenue inspector at the embarkation desk on the pier the day of sailing when tickets and passports are examined.

Further information will be given at any office of the United States Lines.

SEATS AT TABLE : The Second Steward is in charge of the Dining Room and will assign tables if they have not been arranged for previously.

SHOE CLEANING : Shoes will be cleaned and polished if left outside the stateroom door at night.

TENNIS COURTS: A Deck Tennis Court is situated on the Sun Deck.

TRAVEL INFORMATION : Passengers may secure information concerning steamship, rail or air routes at the Purser's Office. Arrangements can be made to secure tickets and reservations for the transportation desired.

VALET SERVICE : An excellent valet service is provided for the convenience of passengers. Apply to your Bedroom Steward for this service.

Pressing—Gentlemen's Garments :

Suit	$1.00
Tuxedo	1.00
Overcoat	1.00
Jacket	.50
Trousers	.50

Ladies' Garments :

Dresses—Stains Removed and Pressing ...	$1.50
Suit	1.00
Dress (Plain)	1.00
Evening Gown	1.50
Pleated Dress	1.50
Skirt or Jacket	.50
Vest	.25
Evening Gown	
Stains Removed and Pressing	2.00
Stains Removed without Cleaning Whole Garment	1.00

VALUABLES : It is inadvisable to leave money or valuables in your cabin. They should be delivered to the Purser's Office for safekeeping and a receipt for same will be given on the Company's form. The Company cannot accept responsibility for loss or damage beyond the conditions expressed in the contract ticket and passengers are therefore advised to protect themselves by insurance, which can be arranged on board at the Purser's Office.

UNITED STATES LINES

Weekly Fast Express Service

Sailings FROM Europe 1938

Hamburg - Havre - Southampton - Cobh - New York

FROM EUROPE:	Leave Hamburg	Leave Havre	Leave South-ampton	Leave Cobh	Due New York
PRES. HARDING ...	*June 22	June 23	June 24	June 25	July 2
MANHATTAN ...	*June 29	June 30	July 1	July 2	July 7
PRES. ROOSEVELT	*July 6	July 7	July 8	July 9	July 16
WASHINGTON ...	*July 14	July 15	July 16	July 17	July 22
PRES. HARDING ...	*July 20	July 21	July 22	July 23	July 30
MANHATTAN ...	*July 27	July 28	July 29	July 30	Aug. 4
PRES. ROOSEVELT	*Aug. 3	Aug. 4	Aug. 5	Aug. 6	Aug. 13
WASHINGTON ...	*Aug. 10	Aug. 11	Aug. 12	Aug. 13	Aug. 18
PRES. HARDING ...	*Aug. 17	Aug. 18	Aug. 19	Aug. 20	Aug. 27
MANHATTAN	*Aug. 24	Aug. 25	Aug. 26	Aug. 27	Sept. 1
PRES. ROOSEVELT	*Aug. 31	Sept. 1	Sept. 2	Sept. 3	Sept. 10
WASHINGTON ...	*Sept. 7	Sept. 8	Sept. 9	Sept. 10	Sept. 15
PRES. HARDING ...	*Sept. 14	Sept. 15	Sept. 16	Sept. 17	Sept. 24
MANHATTAN ...	*Sept. 21	Sept. 22	Sept. 23	Sept. 24	Sept. 29
PRES. ROOSEVELT	*Sept. 28	Sept. 29	Sept. 30	Oct. 1	Oct. 8
WASHINGTON ...	*Oct. 5	Oct. 6	Oct. 7	Oct. 8	Oct. 13
PRES. HARDING ...	*Oct. 12	Oct. 13	Oct. 14	Oct. 15	Oct. 22
MANHATTAN ...	*Oct. 19	Oct. 20	Oct. 21	Oct. 22	Oct. 27
PRES. ROOSEVELT	*Oct. 26	Oct. 27	Oct. 28	Oct. 29	Nov. 5
WASHINGTON ...	*Nov. 2	Nov. 3	Nov. 4	Nov. 5	Nov. 10
PRES. HARDING ...	*Nov. 9	Nov. 10	Nov. 11	Nov. 12	Nov. 19
MANHATTAN ...	*Nov. 16	Nov. 17	Nov. 18	Nov. 19	Nov. 24
PRES. ROOSEVELT	*Nov. 23	Nov. 24	Nov. 25	Nov. 26	Dec. 3
WASHINGTON ...	*Nov. 30	Dec. 1	Dec. 2	Dec. 3	Dec. 8
PRES. HARDING ...	*Dec. 7	Dec. 8	Dec. 9	Dec. 10	Dec. 17
MANHATTAN ...	*Dec. 14	Dec. 15	Dec. 16	Dec. 17	Dec. 22
PRES. ROOSEVELT	*Dec. 21	Dec. 22	Dec. 23	Dec. 24	Dec. 31
WASHINGTON ...	*Dec. 28	Dec. 29	Dec. 30	Dec. 31	Jan. 5

* Sails Wednesday A.M. Passengers embark Tuesday evening.

Westbound passengers embarking at Havre, Southampton or Cobh are advised to verify the hour of departure by communicating with our nearest European office a few days prior to their scheduled return sailing hours of steamers from these ports being subject to minor changes due to tide and weather conditions.

The Purser will gladly give you any further information desired

UNITED STATES LINES

AMERICAN ONE CLASS STEAMERS

LONDON — NEW YORK
NEW YORK — †PLYMOUTH — LONDON

†Calling at Plymouth when scheduled.

From New York—EVERY FRIDAY—From London

From Europe **PROPOSED SAILINGS** **To Europe**

Leave London	Due New York	STEAMER	Leave New York	Due Plymouth	Due London
*June 17	June 27	**American Farmer**	June 3	—	June 13
June 24	July 4	**American Banker**	June 10	—	June 20
July 1	July 11	**American Trader**	June 17	June 26	June 27
*July 8	July 18	**American Merchant**	June 24	July 3	July 4
July 15	July 25	**American Farmer**	July 1	—	July 11
July 22	Aug. 1	**American Banker**	July 8	—	July 18
*July 29	Aug. 8	**American Trader**	July 15	—	July 25
Aug. 5	Aug. 15	**American Merchant**	July 22	—	Aug. 1
Aug. 12	Aug. 22	**American Farmer**	July 29	—	Aug. 8
*Aug. 19	Aug. 29	**American Banker**	Aug. 5	—	Aug. 15
Aug. 26	Sept. 5	**American Trader**	Aug. 12	—	Aug. 22
Sept. 2	Sept. 12	**American Merchant**	Aug. 19	—	Aug. 29
*Sept. 9	Sept. 19	**American Farmer**	Aug. 26	—	Sept. 5
Sept. 16	Sept. 26	**American Banker**	Sept. 2	—	Sept. 12
Sept. 23	Oct. 3	**American Trader**	Sept. 9	—	Sept. 19
*Sept. 30	Oct. 10	**American Merchant**	Sept. 16	—	Sept. 26
Oct. 7	Oct. 17	**American Farmer**	Sept. 23	—	Oct. 3
Oct. 14	Oct. 24	**American Banker**	Sept. 30	—	Oct. 10
*Oct. 21	Oct. 31	**American Trader**	Oct. 7	—	Oct. 17
Oct. 28	Nov. 7	**American Merchant**	Oct. 14	—	Oct. 24
Nov. 4	Nov. 14	**American Farmer**	Oct. 21	—	Oct. 31
*Nov. 11	Nov. 21	**American Banker**	Oct. 28	—	Nov. 7
Nov. 18	Nov. 28	**American Trader**	Nov. 4	—	Nov. 14
Nov. 25	Dec. 5	**American Merchant**	Nov. 11	—	Nov. 21
*Dec. 2	Dec. 12	**American Farmer**	Nov. 18	—	Nov. 28
Dec. 9	Dec. 19	**American Banker**	Nov. 25	—	Dec. 5
Dec. 16	Dec. 26	**American Trader**	Dec. 2	—	Dec. 12
*Dec. 23	Jan. 2	**American Merchant**	Dec. 9	—	Dec. 19

* Calling at Boston.

The Purser will gladly give you any further information desired